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**The role of indigenous knowledge and innovation in creating food sovereignty in the
Oneida Nation of Wisconsin**

by

Jennifer Marie Vazquez

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Major: Sustainable Agriculture

Program of Study Committee:
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Ames, Iowa

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Preface
Locating myself as a researcher

Curing a fright

Among the Maya
to cure a fright
you put a fresh-laid egg
in the armpit
of the frightened person
and in that way
the self-worth and health
that the phantom has stolen
will return to the afflicted.

But, how can we cure
the pain and fear
built up over the many centuries
of plunder and negation
of our Mayan identity?

Someone said
the egg is a great idea,
but in our day it's better
to confront
and do battle
with those causing the fright,
than endure the centuries
warming turkey eggs
in your armpits.

Victor Montejo

My name is Jennifer Vazquez and I used to be an aspiring poet, scouring the most obscure and the most well-known poetry I could find, spending my nights with friends as we read out loud to each other our works and the works of others. In all those nights, this poem by Victor Montejo has never left my thoughts; it's stuck right with me as I've gone on to other things, found other goals. At the time I first read this poem I was falling deeply in love with the Northwoods of Wisconsin where I was going to college, working as a farm hand on local organic farms and doing research on human perceptions of wolf conservation. I was living in small apartments in a well-loved but more or less rundown town situated squarely

between two Ojibwe reservations, home, respectively, to the Red Cliff and Bad River bands of Ojibwe. It was in this context that I began in earnest to study the relationships between food, cosmology, culture and ecology.

In the North I was learning how to grow crops, raise animals and find medicines; to navigate the woods and the curves where the great waters of gitchi gummi (Lake Superior) met the old, soft land. I felt the life sap of maple trees run its mineral medicine through my winter veins and was never more thankful. I learned how the Earth has organs. I used compasses and faith to navigate the dense fog of gitchi gummi's bays and believed stories about an elder Ojibwe woman who every year would travel hours and unknown numbers of miles alone with a team of dogs and a sled to see her relatives around the Apostle Islands in the dead of winter. I went to my first pow-wow where I was so amazed by the young dancers that I cried. I once made a fire with a bow drill, using moss to hold the small embers as they turned to coals. I was touched by the magic of blizzards and the blessings of the soil found in an old sea bed or river bend. I saw oxbows form and watched a lake whose tide is ruled entirely by the moon, whose contained waters slosh from side to side like a giant kettle. I met people who still crafted boats by hand. I was introduced to a world of magnetized rocks and energetic whirlpools, of even greater mysteries, and wolves and bears, wild leeks, choke cherries and fiddlehead ferns. I was active in the community, living in it as hard and as well as I could.

In a collection of essays titled *Research as Resistance* (2005), Kathy Absolon and Cam Willett state that it's important for a researcher to locate him or herself from the outset of any research project. In doing so, I make my own position as a researcher, my voice and where I'm coming from, clear from the beginning. They proposed that this type of locating is needed because neutrality and objectivity in research do not exist since they do not exist in the world outside of research. Locating myself makes me accountable for my views and my approach to the research. I agree with this sentiment so I want to share with you briefly what, in addition to my love of Wisconsin's ecology and people, drew me to this research.

I grew up moving every two or three years because my dad was in the Navy. By the time I was eighteen my family—me, my mom, dad and three brothers—had moved twelve

times. As a kid my parents did a good job of making this seem normal for my brothers and me. We would go hiking, canoeing, and biking, generally exploring our new home by foot and water. We would volunteer with local organizations and attend church even though neither of my parents was particularly religious. Every two or three years I learned all about a new community, both human and, well, non-human. At the same time, I always had to introduce myself, a white girl with red hair, freckles and a decidedly Hispanic last name—Cuban no less—and I quickly developed a keen understanding of identity, both in the communities I was plopped in and at a very personal level as well.

Questions of identity may well be what first drew me to Native communities, where I saw people who I read about in the history books (what little there was to read) living a modern life that was at the same time very similar to mine and yet unique, distinct somehow. Throughout college I worked every summer on local farms and did research at school—anyone who knows me now, knows that things haven't changed much—and I got involved with the Bad River Gitiganing Community Garden project to a limited extent as a volunteer. Here I was in school learning all sorts of things about Native American culture and ethnobotany, sustainability, biology and social justice and there was this group, a tribe, my neighbors, who were applying what I was learning in school in their own lives. I was amazed. The Gitiganing project took high-school aged students and younger and worked with them to grow vegetables in a large garden. These vegetables were sold at a local farmers' market in order to supply a salary for the student workers. At the same time, the tribe was providing education on traditional foods, nutrition and health in an effort to combat the diabetes epidemic in their community. Youth volunteers would also go to elders' homes and build traditional raised bed gardens for them, while the elders in turn would share some of their knowledge and stories. The Bad River reservation was a tough place to live, from harsh winters to endemic poverty, yet the community had figured out how to do this: how to make a local food system begin to meet their goals.

You may say this has nothing to do with identity. But I understood how to talk with people about how they were learning about traditional foods and going to school for mechanical engineering at the same time, for instance. I understood that identity as a Native person was complicated and far from static. And I enjoyed the work. I generally tend to

avoid stereotypes but I'm just going to put out there that Native people laugh. A lot. Despite often extreme impoverishment and negation of cultural identity, the Ojibwe had a living, vibrant culture that they enjoyed and this very much impressed me.

As a college student studying sociology I also learned about the extractive nature of research and read account after account of how top-down approaches to research and development tended to have more negative consequences (quantifiable or not) than grassroots, or bottom-up, ones. I learned to value participatory research and projects that were community led and I learned that marginalized communities were capable of doing just that: of leading themselves. Yet there were and still are few contemporary accounts of Native communities doing this work, yet alone research on Native American farming. As a graduate student studying sustainable agriculture at Iowa State, I saw an opportunity in my master's research to try and make such an account. I had heard through my volunteering with the Bad River and Red Cliff Ojibwe about the Oneida's work to revitalize their traditional lives and improve their health through food system relocalization. I made some phone calls to the few contacts I had in Bad River and found my way to Oneida's Tsyunhehkwa program and the Oneida Community Integrated Food Systems initiative. From there, I worked with a few key people from Oneida to design a research project that would be useful to the Oneida's already dedicated efforts at promoting food sovereignty. It is my intention that this study will be helpful to them and that my joy in doing this research is evident in my account of the project.

Chapter One

Introduction

In the United States today many Native American tribes struggle with poverty, food insecurity and a scourge of diet-related illnesses. Yet many indigenous peoples existed for millennia on healthy diets of locally produced and gathered foods which closely linked local communities with their diverse environments. These traditional food systems helped create a wealth of unique cultural knowledge, identities and institutions among and between individual tribes. As a result, traditional foods and food systems are closely linked with indigenous knowledge and often extend to belief systems, spirituality and indeed entire worldviews. As Kuhnlein (2009) stated,

The dimensions of nature and culture that define a food system of an indigenous culture contribute to the whole health picture of the individual and the community—not only physical health but also the emotional, mental and spiritual aspects of health, healing and protection from disease (3).

Indeed the decline of traditional food systems has paralleled a steep rise in diabetes and obesity within Native American communities, many of which had little or no incidence of diabetes as recently as 1912 (Fazzino 2008). Today Native Americans have the highest rates of diet-related illness and mortalities of any racial or ethnic group in the United States (National Diabetes Fact Sheet 2007). These figures reflect the many challenges to the cultural identity, spiritual life, environmental quality and stability of local economies and political institutions which, in part, support healthy diets in indigenous communities (Kuhnlein and Receveur 1996; Livingston et al. 2010). The rediscovery and recreation of sustainable, local food systems through the promotion of traditional foods is increasingly seen as a way to solve some of these pressing problems at both the community and individual level (Leann Bye 2009 ; Time for the harvest: renewing Native food systems 2010). Collectively, these efforts are building tribal nations which are *food sovereign*.

Relocation, assimilation, loss of land, and the introduction of commodity foods are all examples of events that can lead to cultural change and changes to the food system; essentially, to the *loss* of food sovereignty. Ultimately, what is lost is the ability of communities to control decisions regarding food, from its production and processing to its

distribution and consumption, to the role of food in culture and cosmology. However, in order to (re)create a healthy local food system, related traditions and knowledge cannot be relied upon if they are not currently practiced within the community, and the loss of this knowledge and skill base can result in the need for what some scholars have called the “process of rediscovery”. As a result, food sovereignty and food system development may go hand-in-hand with the revival of related traditions and customs as they are viewed as resources for creating a sustainable tribal community. The Oneida Nation of Wisconsin has been formally reviving traditional foods and recreating its local food system¹ for over twenty years and has accumulated, or “regained”, much knowledge and insight into traditional food systems, local foods, and food sovereignty in doing so. Much of this knowledge comes from practices maintained by community members over time and supported by a specific worldview.

The goal of this research is to contribute to the promotion of food sovereignty and local food system revival on the Oneida Nation reservation of Wisconsin by better understanding what knowledge and practices current farmers and gardeners (“growers”) in Oneida are using today. Community interest and knowledge about traditional food systems and local foods in general is assessed in an attempt to better understand the benefits and qualities of traditional and local foods as identified by the Oneida community.

Documenting and analyzing practices and beliefs of current growers can facilitate, through the narrative tradition, the successful exchange of information among community members and agencies working towards food system revitalization on the reservation, as well as with other tribes in the Native Food Systems movement. This research also contributes to the small but growing number of studies on *indigenous knowledge* in agricultural development by documenting and analyzing the function and qualities of indigenous knowledge in Oneida. While indigenous knowledge in development has been embraced internationally, few studies have examined how indigenous knowledge has or can play a role

¹ Local food systems have been defined in various ways and at different scales by both researchers and practitioners. In general, local food systems are made of foods eaten within 400 miles from their origin, or within the state in which the food is produced (Martinez et al. 2010). Local food systems are also characterized by short supply chains and direct farmer-to-consumer sales. Small farms, farmers’ markets, community supported agriculture (CSA) share programs and farm-to-school programs are common features of local food systems.

in food system resurgence in Native American communities in the United States. Research on the application of indigenous knowledge and traditional ecological knowledge demonstrates that using the knowledge and institutions already present in a community can create lasting changes in an area by encouraging participation while honoring culture and place.

Research questions and methods

Questions driving this research can be divided into two categories: (1) knowledge and skills; (2) benefits and qualities.

Knowledge and skills

- To what extent are tribal members integrating indigenous knowledge into their production, whether for home or commercial use?
- What practices do growers who are non-tribal use and how do they relate to practices used by tribal members?
- To what extent are traditional foods grown?
- How do growers access information on traditional foods; how do growers maintain food-related traditions?
- What informs the decision to plant specific varieties?
- What sources are drawn upon for innovation as new problems arise?

Benefits and qualities

- What benefits of traditional foods and growing techniques do residents of Oneida identify?
- What benefits of local foods do residents of Oneida identify?
- Are there differences between local foods and traditional foods?
- What interactions occur between community members over food, from its production to its consumption?
- What role do women play?

A qualitative case study was used to holistically address the research questions through ethnographic techniques. Field data were collected through participant observation during visits to the Oneida community, including a month-long internship with Tsyunhehkwa, an Oneida tribal government program focusing on traditional foods and organic growing practices. Farmers, home-gardeners and community members who are active in local food system initiatives, including tribal employees, were sought for their opinions and expertise in relation to farming and agriculture. Tribal members were the focus of this study; however, the reservation is considered a “checkerboard community” as a result of changes in land ownership over time so it was important to seek out the views of non-tribal members as well in understanding food system revival and knowledge at the community level.

Eight interviews were conducted with local growers because they have expert knowledge in relation to food production and gardening. Two focus group sessions were conducted to gain further insight into the knowledge, practices, benefits and qualities of traditional growing practices and traditional and local foods. One group was made up of elders well-known for their garden or farm. The other group was held with women who are active in food system development, home gardening and/or healthy diet initiatives within the community. Three tribal employees working on food-system development comprised an informal advisory council which helped guide the research process and identify participants. During participant observation, the advisory council recommended people for me to meet within the community, either to interview or simply get to know. A snowball sampling technique was then used to identify more growers and focus group participants.

Challenges to the research included time to conduct the study and the geographic distance from Iowa State University in Ames, IA to the Oneida Nation Reservation of Wisconsin near Green Bay, Wisconsin (the two are about 410 miles apart). Potential limitations stem from my role as an outside researcher working in the Oneida community. Trust takes time to gain and I was meeting growers and community members for the first time while introducing the project. As a result, participants are more likely to be people already comfortable talking with an outside researcher or someone like a reporter and may not be typical of the population. I was not able to offer compensation for participants’ time

as well, so this may also have limited who was able to participate in interviews and focus groups. This does not invalidate the research but limits the generalizability of the research findings. Participant observation during different community events and meetings helped provide more perspective and balance to the research findings. Further, I was explicitly seeking out information from experts and advocates in the community and not necessarily the general population.

Organization of the thesis

Chapter One presents an overview of the research project. In Chapter Two, I review literature on the application of indigenous knowledge in development projects and provide a background on the Native Food System movement in the United States. In Chapter Three, I present a history of the Oneida, focusing on their lives as a horticultural people. Changes which have impacted their land base and food system from contact to the modern day are also presented in order to contextualize the research questions and findings within the Oneida community. Study design and research methods are the subject of Chapter Four. Chapters Five and Six present results from the study, combining data from participant observation, interviews, focus groups and to some extent a review of primary documents related to food. In Chapter Five, I focus on the knowledge and skills used in the production, storage, and consumption of foods, and analyze how knowledge is regained and exchanged. Chapter Six describes some of the qualities of the Oneida food system, as well as some of the outcomes, challenges and strategies for the continued revival and relocalization of the Oneida food system. I conclude Chapter Seven with a summary of key themes and a discussion of the research findings and suggest areas for future research.

Chapter Two

Indigenous knowledge and the Native Food Systems movement

Several bodies of literature can inform a study on the role of indigenous knowledge (IK) in (re)building food sovereignty in a contemporary Native American community. In this chapter I first briefly review IK as an alternative approach to development and then focus on the rise of Native food system redevelopment and food sovereignty. Indigenous knowledge has been applied in development strategies internationally and scholars propose that this approach leads to lasting development within specific locales. The small but growing local food movement in native communities provides insight into how indigenous knowledge has and can be a part of food system development within the US. Some of these groups work explicitly towards food sovereignty while in other communities the goals in food system development are more broadly defined. This review raises several questions on how indigenous knowledge can be applied in the development of native food systems and I explore these questions at the end of the chapter.

Indigenous knowledge as an alternative development strategy

A growing number of alternative development strategies have recently emerged in order to counter the last fifty years of development strategies which have largely been seen as unsuccessful (Rapley 2007; Shiva 2007). The ability of any development theory or approach that focuses too narrowly on economic growth in improving human welfare has been greeted with increasing criticism. Add to this the growing need to protect or preserve the environment while ending or alleviating the systemic poverty plaguing many developing nations—and indigenous groups in particular—and development planning (and theorizing) becomes quite a daunting undertaking. While these are indeed no small tasks, development that honors local knowledge, institutions, production methods and ecotypes has more potential for success because it builds upon and improves existing infrastructure rather than reinventing or imposing a new paradigm that may not “fit” the society ideologically or economically. As the search for new development theory and practice grows ever more urgent, indigenous knowledge as an approach to development has proven useful in creating

avenues for new strategies that can be designed, implemented and maintained by indigenous peoples themselves in a manner that best suits their goals.

Much research has focused on the role of indigenous knowledge (IK) in fostering diversity and creating lasting development that builds on local culture and infrastructure in international settings (Agrawal 1995; Warren 2004). IK is also increasingly seen as a means to preserve biodiversity (Berkes et. al. 2000; Brush 2004) or as a means of protecting indigenous resources in light of intellectual property rights and “bio-profiteering” (Mgbeoji 2006). However, indigenous knowledge has also been characterized as having a distinct lack of authority or power over western culture in creating local development and management plans (Angioni 2004; McGregor 2010). In part, this lack of authority is emblematic of the type of development planning that is prescriptive and top down and which has increasingly come into question as these methods have not consistently demonstrated positive or lasting results.

In looking at indigenous knowledge as an alternative means to development planning, we move away from a top-down approach into one that is more inclusive and participatory in nature. This fosters community action and participation which can lead to both sustainable development and a reassertion of rights, from land tenure to cultural practices. For these reasons, IK may prove useful in developed countries as well, particularly within historically marginalized American Indian communities. While IK has been applied to some extent to resource conservation efforts within native communities in the United States (Berkes 2008), little application in agricultural or food systems development has been made. In understanding the potential for applying indigenous knowledge as an approach to development in Native food systems in particular, it is useful to first place IK within the context of alternative development strategies which have developed over time as a means of redressing some of the mal-effects of prescriptive development strategies.

A post-development era

Over the course of the 20th Century, development theories and practices have evolved considerably as the world has moved from one dominated by a few colonial powers to one where nation-states are increasingly connected through the forces of globalization. While

there have been some development successes, such as in parts of East Asia (Beeson and Islam 2005), in Botswana (Carroll and Carroll 1997), the Gulf nations (Piasecki and Wolnick 2004), and in a handful of Latin American countries (see Collins 2005), the majority of those living in the developing world have not seen the benefits of fiscal growth and development in their own lives. One reason for this is that dominant development theories over the last fifty years have focused too narrowly on economic development, producing rigid, prescriptive policies that did not—and do not—take into account local conditions and contexts of development, yet alone the desires or goals of individual nations and peoples. Furthermore, these policies tended to *exclude* non-economic factors, such as health or gender, in the development planning process; did not take into account the realities of developing countries, including skill levels in technological industries and the degree of formal or technical education available; and too heavily emphasized modernization or sector replacement that did not take into account the costs and capital needed to build and maintain these sectors (Piasecki and Wolnick 2004). It was noted by Caiden and Wildavsky (cited by Conyers and Hills 1984) as early as 1974, that:

Poor countries cannot and should not attempt at all costs to follow a fixed path. Just the opposite. They should enhance their ability to change course at short notice. They cannot avoid error but they might be able to reduce the cost of making mistakes.

While there have always been a diversity of development strategies employed—some of which have been “place based” and focused on the needs and abilities of individual countries and groups—there is a general consensus that development strategies have been largely unsuccessful and in some cases more detrimental (Conyers and Hills 1984). As a result of these failures, a broad-based antiglobalization movement has emerged along with a growing body of literature from academics and practitioners alike which calls for the creation of *alternative* development strategies. Sometimes called “postdevelopment”, these strategies in general reject meta-narratives, the one-size fits all strategies which tend to reinforce existing power structures, and focus instead on the particular (Rapley 2007). They essentially reject any universal model and new practitioners are often leery of the macroeconomic prescriptions that have so characterized development, whether they originate within the country, such as Latin American structuralism, or are generated externally, such as

the Structural Adjustment Programs (SAPs) championed by the World Bank development strategists. To this effect, however, Rapley warns of over romanticizing efforts to circumvent state or formal market power through the inclusion of previously unvalued sectors of the economy to the Gross Domestic Product (GDP) and assuming that inclusion will create lasting or more egalitarian development. No matter what system is in place—domestic or external, formal or informal—systems of repressive power that have come to be easily replicated, or the violence “privatized”, and are not necessarily causes for celebration against western hegemony or the presence of alternative development strategies (196).

Further, Leal (2007) proposes that participation, a common “buzzword” and approach among postdevelopment theorists, is also made more difficult as a result of the legacies of economic-focused development. He comments that SAPs and the privatization of common goods and services has led to a sense of social desperation, making any kind of self-consciousness and thereby, participation, more difficult. While participation may not be the “fix” to chronic underdevelopment, it is valuable for its ability to work as a *means* and an *end*, as Parayil (1996) suggests. He proposes that if development is to be participatory and not a domestic replication of familiar forms of structural inequality, consensus or common vision *for a place* and *of a place* needs to be honored first, then plans and projects made.

Parayil, however, also warns against viewing sustainable development, one popular, alternative development paradigm, as a way to *ameliorate* the ill effects of development over time. Sustainable development seeks to create institutions that take into consideration the economic, social, and environmental longevity of decisions and practices. Parayil proposes that in order to achieve these goals, sustainable development strategies need to be first contextualized in a globalized world characterized by the often unidirectional flow of goods and information from the global South to the global North. Then emphasis is placed on the social and political factors specific to each society or nation-state. This layered context for sustainable development may, much like “participation,” change the focus to the means not the ends, opening the door for development as a process which values local experiences. It is within this framework of participation and sustainable development that I now turn to indigenous knowledge and its role in rural and agricultural development.

Defining indigenous knowledge

Though many different definitions of indigenous knowledge (IK) exist, the concept commonly refers to a tacit knowledge built over time by a group of people in a specific locale. This includes a system of classification, a set of empirical observations about the local environment, a system of self-management that governs resource use, and means for the passing of knowledge from one generation to the next (Johnson 1992; Rahman 2000). Criticisms of indigenous knowledge tend to focus on definitions or perceptions of IK as a “body” of knowledge rather than a living process which at its core maintains a worldview and spirituality (cosmology) (McGregor 2010).

Similar in concept to indigenous knowledge is *traditional ecological knowledge* (TEK). While TEK also represents knowledge and practice accumulated over time by a specific group, many scholars prefer to use indigenous knowledge because something that is “traditional” may also be associated with being fixed in a specific time and place. Among applied anthropologists the term “traditional” has been problematic because it is too often “denoted [with] the 19th century attitudes of simple, savage and static” (Warren 1995). Some scholars have proposed that what is considered traditional may be hard to define and, more importantly, may belittle the ability of indigenous groups to create new principles and conventions in modern contexts (Berkes 1993). As a result, indigenous knowledge, or indigenous ecological knowledge, is often used in place of TEK though, as is the case with this thesis, the concepts are considered to be largely interchangeable.

Applying indigenous knowledge in development

Increasingly, indigenous knowledge is seen as a resource for development and has been adopted in part by even the largest development-oriented non-governmental organizations (NGOs) such as the World Bank and the United Nations Development Program (UNDP). In a review of IK in development, Warren (2004) found that IK was most useful when viewed as a starting point for a cycle of development in which IK is the foundation for decision making and local-level action. He states that IK has gained popularity as participatory approaches to development have emerged, resulting in a large and growing

body of literature on IK. The majority of this literature focuses on IK in development and, specifically, on production agriculture/farming systems/agroforestry development.

Some have claimed that academia, NGOs and the state sector have all embraced IK as a result of political and economic pressure to redress some of the mal-effects of previous development strategies (Ellen and Harris 2004). Colonization, globalization and dominant development approaches have taken a particularly hard toll on indigenous communities throughout the globe and the world at-large has begun to take notice. As a result, the United Nations after ten years of drafting and editing, produced a formal Declaration on the Rights of Indigenous Peoples in 2006 (UN General Assembly Resolution 61/295 2007). This declaration explicitly grants indigenous peoples control over developments affecting their lands, territories and resources in order to develop in accordance to their own aspirations and needs while strengthening local institutions, cultures and traditions. Yet as Parayil (1996) found among many rural communities in India, indigenous groups may have lost the ability to address problems using solely their indigenous knowledge as western ideas and infrastructure imposed through patchwork development projects have altered their environment. In working with members of the Tohono O'odham, a Native nation in the southwestern United States, Gary Nabhan (1997) proposed that this society began to suffer from dietary illnesses (as a result of changes to their food system) not when economic and resource development began to alter their environment but rather before this, when their culture was disrupted during the earliest stages of contact and colonization.

Despite these changes to culture and/or the environment, some scholars propose that an indigenous *worldview* often remains in place (see Sanga and Otralli 2004). As a result, when forming development projects, solutions to local problems that do not fit with local knowledge systems that form part of this worldview, in whatever state it exists, may prove unsuccessful for no other reason than this fundamental disconnect. Warren (2001) states that,

Every society also has mechanisms through which indigenous knowledge provides the basis for group-decision making and the generation of new knowledge and technologies when current problems and how to cope with them are discussed (447).

In an extensive review of traditional ecological knowledge Berkes (2008) articulates how many authors place indigenous knowledge within a “knowledge-practice-belief complex” (16). He found that while there is agreement that multiple layers of indigenous knowledge

exist, there is little agreement about where these layers begin and end. He summarized that analysis of indigenous knowledge happens across four interrelated levels with the qualification that in different contexts these distinctions may not hold or be useful in understanding the function of indigenous knowledge within a given community (Figure 1).

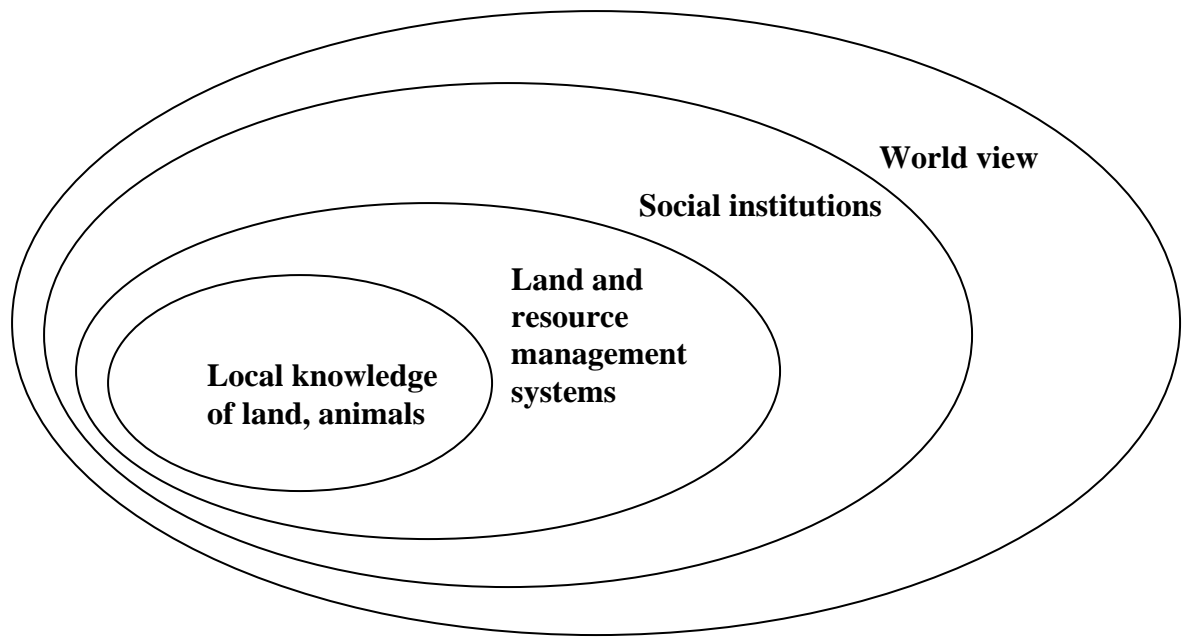


Figure 1. Levels of analysis in traditional knowledge and management systems (adapted from Berkes 2008, 17).

Other scholars have embraced this complexity by focusing on how indigenous knowledge can and has been integrated with scientific knowledge. In looking at how IK can be incorporated with academic and other scientific approaches to planning, Rahman (2000) presented a detailed framework that has been successful in bridging these two sets of knowledge in Southeast Asia. His approach focused on advocacy, social mobilization and program communication throughout the planning continuum and heavily emphasized the use of indigenous knowledge as a means of creating successful development by encouraging lasting participation throughout the process of development.

Others have also found indigenous knowledge to be beneficial in development initiatives because it “not only serves the interests of local populations but also renders

projects more efficient and efficacious by increasing local participation” (Colajanni 2004, 284). It is important to note that highlighting the integration of IK with scientific knowledge, or local development involving outside practitioners, is not meant to imply that indigenous groups are not capable of self-driven development. Instead, I am attempting to demonstrate the levels of transformation that are possible despite the difficulties present in improving the lives of people in societies whose resources have been systematically extracted, their cultural institutions ignored, and their very culture targeted for assimilation, or worse, eradication. To this effect, McGregor (2010), a university professor and an Anishnabeg member of the Whitefish River First Nation in Canada, proposed that indigenous societies often find that, “resisting and reclaiming form an integral part of our concept of sustainable development.” Valuing indigenous knowledge in development can increase participation and help redress some of these historical barriers to community-driven progress.

Many global development agencies, such as the United Nations Development Programme began as early 1992 during their Convention on Biological Diversity (CBD) to promote the preservation and wider application of “knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles” because they have been found to positively impact conservation while promoting the “sustainable use of biological diversity” (Wong et al. 2004). I will present brief case studies of how indigenous knowledge is applied in development planning after first exploring how the concept of biocultural diversity helps broaden our understanding of IK in light of creating sustainable development no matter the sector.

A note on biocultural diversity

In addition to viewing IK as an alternative development paradigm, another common means of highlighting the benefits of IK in sustainable development is through the conceptual framework of biocultural diversity. This framework proposes that high levels of biological diversity correlate with high levels of cultural diversity and biocultural diversity is commonly seen as the “inextricable link” between the two (Maffi 2007, 268). These linkages are understood and mediated through the use of language in creating and maintaining knowledge and practices related to the environment. Beginning in the late 1980’s research began to look

at the impacts that the complex web of human-environment relationships have on biodiversity in an attempt to identify how some local and indigenous knowledge systems provided for a local society yet had low environmental impacts on the land. The view that places with low environmental damage would also have high levels of cultural diversity arose from work conducted in the fields of ethnobiology, ethnoecology and anthropology. Initial studies looked for a correlation between high linguistic diversity and high biological diversity as a way to test this “link” and ground the theory. It was found that areas with high linguistic diversity, representative of high cultural diversity, did tend to have higher levels of biological diversity.

Linking these two concepts is important in developing a conception of indigenous knowledge in agricultural development that is sustainable. From this perspective, cultural and biological diversity are both in and of themselves “critical components of the web of life” and are essential factors affecting the “vitality, organization, and resilience of the ecosystems that sustain life” (Maffi 2007, 274). While modes of subsistence are influenced by things historically outside of human control, such as geography and climate, and increasingly by human-made inequalities, it has been found that low linguistic and biological diversity is associated with complex societies that have large-scale economies. The industrial agricultural system commonly exported to developing countries through transfer of technology (ToT) programs has been done so with disregard of the reality that industrial agriculture has exacted a negative toll on the biological and cultural systems of many countries of the global North, where this system was originally designed (Altieri 1995; Goldschmidt 1978). The ability to adapt agriculture to new economic or environmental realities may be further limited by the type of monoculture, or lack of diversity, these programs fostered. This appears to be a downward spiral: that less diversity is unsustainable because it limits the ability of an ecosystem and the communities it supports to adapt to change or be inventive. However, biocultural diversity is still a valuable concept or framework because it forces a view of sustainability that values IK for both the language it is housed in and the methods it implores in a locale. This can help broaden our view of what is important to creating sustainable development.

The now ubiquitous definition of sustainability as a three-legged stool with environmental, economic, and social legs is undoubtedly a western one and has been criticized for how easily it can be co-opted or abused. This kind of three-pronged sustainable development can be heralded from afar as a success even if the three tenants are applied while ignoring local conditions and contexts. Biocultural conceptions of sustainability add a “fourth leg” of culture to this common model; this addition helps encourage sustainable development to embrace local culture as the context for any changes to the system. Using IK in development projects creates an avenue for this tenant of sustainability to be incorporated from the beginning stages. In turn, this may encourage the biological diversity that cultural diversity is reliant on and in which indigenous knowledge is lived. In this light, biocultural diversity can be seen as producing an “upward spiral” that can have positive implications for rural and agricultural development.

Case studies of indigenous knowledge in agriculture and rural development

Ghana: cosmology and poultry production

In a series on Best Practices in Indigenous Knowledge, United Nations Educational, Scientific and Cultural Organization (UNESCO) highlighted a project in Ghana which improved poultry production by incorporating the introduced technology with the cosmology, or set of spiritual practices and worldviews, held by the community (Millar 2005). The project focused on dialogue between outside professionals and key members of the community, including spiritual mediums, traditional healers, elders, women and persons knowledgeable about poultry production. Community members led the discussion on innovations and changes they wanted and they identified the need for improved poultry breeding. The outside professionals then searched for technical knowledge and resources that might provide the sought-after solution; this was then integrated with indigenous knowledge systems in order to maintain the flock. Poultry is used by this community in sacrifices and all parents and offspring must undergo a ritual performed by a medium in order to serve this function. All new breeds used to improve the flock were approved by these mediums and subject to the ritual. This makes the offspring suitable for sacrifice, which ultimately justified the investment of the local community in increasing production. As a result of larger poultry numbers, herbal medicine treatments for poultry using plants

from the local environment were also revived by the community. Here, the best practice is not necessarily determined by the content or result, but rather by the process itself in which the community drove the project from start to finish.

Honduras: mapping for land tenure and biodiversity

Working with indigenous groups to place their land use and knowledge of an area on maps has proven useful in mobilizing communities to protect and claim their lands against state and international interests who seek to use or control the lands these groups occupy (see Finley Brook 2007). In Honduras, participatory mapping projects have resulted in increased land tenure as well as improved conservation and biodiversity. Herlihy and Knapp (2003) describe a project coordinated by a local NGO and several indigenous organizations who undertook a large-scale mapping project in an attempt to secure land claims with the Honduran government. The project started with a questionnaire administered to over 40,000 people living in Eastern Honduras. Public meetings were held in which individuals drew maps on paper, drawing on a long history of creating maps on the ground, in the soil, to communicate different ideas and locations. With the assistance of geographers and development professionals, vegetative maps of the area were also made and indigenous groups collectively drew the extent and types of use in the land area around individual villages. As a result, the indigenous groups were able to demonstrate a wealth of data/information about the habitat, ethnobotanical uses of land, subsistence methods and as a result, better articulated their claims to land with outside bodies; in particular, government authorities. This project relied on a high level of trust between researchers and the indigenous community and resulted in significant positive impacts on the political and legal conditions affecting indigenous Honduran's land claims.

Indigenous knowledge in food systems

In a collection of case studies involving intensive research on food acquisition, use and nutritional values of indigenous food systems, the Food and Agriculture Organization (FAO) of the United Nations identified the need for indigenous knowledge to be incorporated with modern agricultural systems in order to best ensure that the nutritional and cultural

needs of native communities are met now and into the future (Kuhnlein, Erasmus and Spigelski 2009). The FAO documented the food systems of twelve indigenous groups throughout the globe in order to encourage greater appreciation for indigenous people's food systems and in turn, call for their promotion and protection. This documentation was carefully undertaken by indigenous peoples, students, researchers, development advocates and policy makers. This represents an important aspect of IK in agricultural development as IK has been viewed as inaccessible to the greater scientific and professional community because it is not communicated in *our* terms, i.e. codified through books, tests, and western experiments (Berkes 2008). In this project, documentation of the food system was conducted with community leaders with the specific goal of figuring out how to communicate the findings outside of the local community. This documentation will be followed with health programming based in the indigenous knowledge, culture and environment that sustains the diverse local food system found within each community.

One group that was involved in the project is the Inuit Community living in Pangnirtung, Nunavut, Canada. This group had a high level of diabetes and food insecurity, with 41% of energy obtained from traditional food and the remainder from market foods (Egeland 2009). The amount and variety of different traditional foods consumed is impressive, ranging from clams, gulls and terns to seaweed and wood sorrel. In many cases, these traditional foods have been found to be healthier than foods accessed at markets. However, in the most simple of terms, the overall Inuit diet can be characterized by the eating of caribou (traditional source) and the consumption of soda (market food). Unlike market foods, the researchers found that traditional food was shared at higher rates among Inuit and provided a food source when there was no money to buy food, or no food available. While still in the early stages, the community hopes to use "traditional knowledge...to promote healthy market food choices in an effort to prevent the adverse effects of acculturation" (11).

Defining success

Although just the tip of the iceberg, these case studies illustrate that indigenous knowledge can be applied in agricultural development in a variety of ways and with different goals. Overall, development processes that involve IK from the beginning, or which are led by indigenous groups valuing their own-knowledge, have been shown to increase participation by indigenous peoples at both local and national levels, better ensuring longevity of projects. Through IK, projects can focus on the positive aspects and assets of the people, which can be empowering and lead to diverse economic opportunities. Moreover, IK focuses on the process of development and involves the community in a development *cycle* which better ensures the sustainability of a project.

However, IK has several shortcomings as well. For instance, identifying local or indigenous knowledge can prove difficult and this is made more challenging given western language's reliance on nouns and evidence in thought and indigenous language's reliance on verbs and feeling (Seton 1999). IK in its formation and use is not usually a written knowledge which can be easily accessed by researchers (Warren 2001). Lastly, some have questioned the usefulness of IK in solving global-level problems, such as desertification and global climate change (GCC), which are faced in many contexts and locales. Many of these shortcomings, however, may lay in the all-too common positioning of indigenous knowledge as the exact counter to scientific knowledge (SK)². This produces a divided approach that is often unproductive in creating and implementing development strategies (Agrawal 1995). Bridging the gap between SK and IK may help facilitate the application of IK in development as part of the solution to larger problems. Briggs (2005) has warned that romanticizing indigenous knowledge and further, de-contextualizing indigenous knowledge may cause it to be less useful in development than intended or promised. Simpson (2005) also found that too often, "Governments...require their bureaucrats to include TEK in policy and legislation without proper consultation with Aboriginal peoples, in unrealistic timeframes, and without appropriate financial support" (1650). Here again it seems that

² Indeed, IK and SK may have more in common than we realize; for instance, they are both experimental, based on observation and acquired over time. With IK, this process of learning typically occurs at a longer time-scale. It should also be noted that there are critiques of SK as well, for example Stephen Lansing's (1991) study of water temples and irrigation in Bali.

problems in applying indigenous knowledge in development stem from a superficial attention by practitioners and government agencies to the role and function of indigenous knowledge.

It is also important to note that often the goal of IK in development may not necessarily be economic growth but rather an emphasis on sustainable human development which also sustains the environment. While this sounds unproblematic in theory, development of this sort may not make contributions to modern indicators of development, such as GDP, and as a result may not be valued or viewed as successful by agencies outside of the community itself. This is certainly not always true, as we saw with the development of poultry production in the Ghana case study, but should also be taken into consideration as a potential issue or shortcoming.

A place for indigenous knowledge in the United States

In looking at poverty and its correlation with development, Rapley (2007) noted that most often the worst poverty is experienced in areas that have been developed but where development is considered incomplete and has not been equally distributed. That a “transitional period” exists in which a developed society may not equally share the benefits of growth and development among everyone in its own population is certainly still true in the United States, despite its position as a well-developed global power. For instance, Native Americans have long faced systematic oppression, including the removal of tribes from their homelands to federally-designated reservations beginning in 1830, or individuals from their families throughout the long era of assimilation and boarding schools (Indian Land Tenure Foundation 2011). Furthermore, interactions between the US federal government and individual, sovereign tribal nations are dominated by the view of the US as colonizer and the tribal nations as colonized. This is quite similar to the historical relationship found between many developed (colonizer) and developing (colonized) nations. Further, within countries themselves national governments often target indigenous peoples for removal from lands for economic development projects or other uses, much like in the United States (LaDuke 2002). As people are displaced or the natural environment altered, the state often provides services to indigenous groups without necessarily encouraging or allowing a holistic development strategy to be implemented.

As a result of these policies and practices, many Native American communities continue to face higher rates of poverty, disease, inadequate housing, employment, etc than any other group in the US. In the 1960's, government sponsored studies found that unemployment among American Indians was over 40% and in some areas as high as 75% (Gibson 1980). In 1968 the average income of a white family was \$5,893 compared to a non-white family, who netted \$3,161; the average income of an American Indian family was \$1,500. In the same year, 63,000 families on reservations lived in dilapidated housing with no plumbing and no sanitation systems. Native Americans were three times more likely to die of curable disease and had the highest rates of infant mortality, tuberculosis and alcoholism in the country.

Today, many reservations still face a crisis of endemic poverty yet a new era of Indian self-determination is helping to improve conditions within reservation communities (Rothenberg 2004). While problems of historical marginalization and underdevelopment persist, progress is undoubtedly being made (see LaDuke 2002). In this context, community development in reservation areas throughout the US has much to learn from IK in international development settings. In particular, it seems that an emphasis on IK may help to redress some of the historical imbalances and problems caused by prescriptive development that fostered dependency on federal entities. IK, in contrast, may encourage avenues for indigenous groups to create sustainable development strategies themselves.

However, few studies on the role of indigenous knowledge or traditional agricultural practices among contemporary Native Americans in the United States have been reported (Nabhan 1989; Sandor et al. 2006; Livingston et al. 2010). Many tribes, however, have already called for the use of indigenous and traditional knowledge in education, agricultural and conservation practices, government structure and other elements essential to daily life and have begun to see successful community renewal from these efforts (Smith 1999; LaDuke et al. 2004; Herzog 2010). In the next section I provide a brief account of Native food systems revival.

Native food systems revival

In response to the many negative impacts that industrial food systems have on society and the environment (Berry 1977; Horrigan et al. 2002), local, diverse agricultural systems are being developed to produce healthier food, often at smaller scales (Keller and Brummer 2002; Brush 2004; Shiva 2007). However, the products of local food systems are often inaccessible to minority populations, due in part, to economic, geographic, and cultural factors (Guthman, 2008). Within Native American communities, dietary change occurred rapidly, moving towards this often unhealthy industrial agri-food system at a swift pace. Until the 1950s, Native Americans were often food insecure as a result of malnutrition and hunger which stemmed from the move to reservations and endemic poverty (Bell Sheeter 2004). After the 1950s, “Native dietary patterns were increasingly dictated by the arrival of welfare checks and the distribution of government commodities” (Bass and Wakefield 1974, qtd in Bell Sheeter 2004, 7). These factors created food systems which excluded traditional foods and overall created unhealthy diets that by 1960 resembled the dominant western diet. Kuhnlein and Receveur (1996) proposed that rapid dietary change has led to the equally rapid decline in knowledge related to traditional foods and health. They summarized the components and impacts of “unregulated dietary change” as a result in changes in land base and culture (Figure 2). Downward arrows within text boxes indicate a decrease, such as less time and energy to harvest foods due to employment, and upward arrows indicate an increase. Darker arrows outside of the text boxes indicate where a change, either an increase or decrease, has the greatest impact. The flow indicates that certain factors first influence the loss of traditional food systems which then causes another set of problems which ultimately impact health.

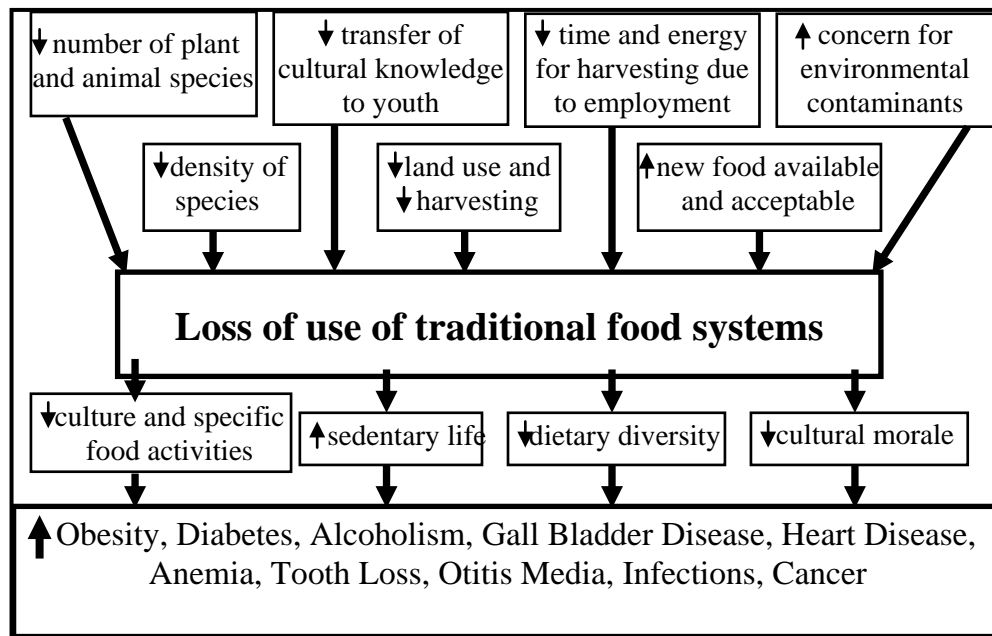


Figure 2. Factors influencing dietary change and consequences of change for indigenous peoples (adapted from Kuhnlein and Receveur 1996, 433).

The Native food systems movement seeks to create food systems that honor the cultural context in which each community's food system exists while making healthy local and traditional foods more accessible to members of its community. For many tribes, food sovereignty is an explicit goal or organizing concept under which their efforts in (re)localizing their food system are organized. There are many iterations of just what exactly food sovereignty is and should be (see Patel 2009). Food sovereignty is often seen as a policy framework that offers an alternative to neoliberal agricultural development (Leann Bye 2009). A simple, working definition of food sovereignty is the right of each nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity (Desmarais 2008).

Food sovereignty was first championed by La Via Campesina, an international coalition of farmers and peasants which formed to resist the global, corporate industrial agri-food system (Boyer 2010). Food sovereignty often works in congruence with food security (having access to enough healthy food), but places greater emphasis on the production of local foods for the benefit of economic, cultural, environmental and health goals within each community (Leann Bye 2009). For instance, The Bad River Orchard project (Lemiux 2007) and the work of the White Earth Land Recovery Project (WELRP) in their Traditional

Community Agriculture Restoration project (LaDuke 2007) both have food sovereignty components. These projects focus on the role of traditional agricultural practices in improving environmental, economic and social justice for the Anishinaabeg on the White Earth Reservation in northern Minnesota and the Bad River Reservation in northern Wisconsin. The First Nations Development Institute (FNDI) is another strong advocate of food sovereignty and native food system development in the US, and provides grants and technical support to native communities working to improve their food systems.

In their publication *Time for the Harvest: Renewing Native Food Systems* (2010), the First Nations Development Institute (FNDI) described several tribal communities and their strategies and goals for improving their health and rebuilding their food systems. The Indigenous Diabetes Education Project in Broomfield, Colorado promotes bison meat, a traditional food, as a way of reducing diabetes rates. Through the Kenaitze and Loudon Tribal Council Programs in Alaska, tribal members are growing vegetables in greenhouses and gardens in order to increase access to fresh produce. The Tohono O'odham Community Action project in Arizona is increasing the community's capacity for agricultural production to meet the demand for healthy, traditional foods, including marketing these foods and providing education. The Navajo Agricultural Technology Empowerment Center is an interdisciplinary spiritual and agricultural project that combines traditional and high-tech approaches to farming and gardening. The Native American Community Board in Yankton, South Dakota is promoting traditional foods and knowledge in several innovative ways, including distributing traditional plants for tribal members to raise in their homes and increasing knowledge about traditional agriculture.

From these descriptions, three overlapping goals for the development of native food systems emerge. These goals are to promote culture, tradition and history through traditional foods and food ways; to increase economic opportunity on the 47 million acres of tribally-controlled range and croplands in the US; and to improve health. In doing so, the FNDI promotes the integration of modern practices with traditional ones, emphasizing the need to rediscover traditional foods and traditional knowledge as part of this process. Two other large coalitions working to increase agricultural production as part of native food system development are The Intertribal Agriculture Council (IAC) and the Intertribal Bison

Cooperative (ITBC). The mission of the IAC is to, “pursue and promote the conservation, development and use of our agricultural resources for the betterment of our people” (Intertribal Agriculture Council 2011). The ITBC is a non-profit tribal organization that “is committed to reestablishing buffalo herds on Indian lands in a manner that promotes cultural enhancement, spiritual revitalization, ecological restoration, and economic development” (Intertribal Bison Cooperative 2011). These groups also call for an increase in the sharing of agricultural knowledge between generations while promoting the integration of modern and traditional practices in redeveloping native food systems.

It is important to note here that the term traditional, though sometimes associated with being static, is quite complex and dynamic; what is traditional is constantly being defined and redefined. For instance, while gardens are traditional to Iroquoian and Southwestern tribes are they to Arctic and Subarctic tribes living in Alaska today? If not, can gardens become traditional? Within the context of this study, bison for example, is not a traditional food of the Oneida, but through federal programs has become part of their identity—and part of a healthy diet—as a Native people.

Applying indigenous knowledge in native food systems

This leads to questions on how indigenous knowledge functions within communities who are recreating a distinctly native food system and becoming food sovereign once again. Can indigenous knowledge be rediscovered? What has been lost and why? How can indigenous knowledge be integrated with modern agricultural practices? Is indigenous knowledge separate or distinct from *traditional* knowledge? Today indigenous knowledge exists in a world which, for many groups, can be quite far away from the ecosystems, institutions, and cultural norms in which they originally lived and formed this knowledge. While IK may help a group articulate their needs, goals, and uses of land to an outside group in a manner consistent with their worldview, care needs to be taken in how scientific knowledge and power can subordinate indigenous knowledge in food system development. In the next chapter, I begin to contextualize these questions within the Oneida Community and their efforts at food system revival by exploring the socio-political forces that have impacted their food system over time.

Chapter Three

The historical, political and cultural context of food system revitalization in the Oneida Nation of Wisconsin

“The development of Iroquois culture can be likened to the growth of a great tree, with roots spreading wide and deep. Like an old tree on the edge of a new subdivision, Iroquois culture can be found today if one knows where to look. It is still growing.”

(William Engelbrecht in *Iroquoia: The Development of a Native World*, 2003)

As with sovereignty in the political realm, there are many long-standing challenges Native communities face when undertaking efforts at promoting food sovereignty. Many of the current challenges in Native American communities stem from the same legacy of federal policies and historical inequality experienced throughout Indian Country. However, the specific means of building food sovereignty—like traditional food systems themselves—are unique in every tribal community (Bell Sheeter 2004). In this chapter, I provide a review of the cultural and political history of the Oneida Nation of Wisconsin as it relates to food and food systems. I describe the role of agriculture in traditional Iroquois culture, of which the Oneida are a central tribe, and analyze how changes to the food system of the Oneida have occurred over time. The deeply contextual nature of food sovereignty efforts in Native American communities is made apparent through this one historical narrative and provides the foundation for understanding indigenous knowledge in Oneida at present. I conclude with a description of the Oneida community today, focusing on the work of the Oneida Community Integrated Food System (OCIFS) in promoting food sovereignty and food system development. First, I turn to a discussion of agriculture in the Americas at the time of contact in order to show that though often overlooked, American Indian agricultural practices have already made great contributions to society.

An introduction to Native American agriculture

Everywhere traders—and later, colonists—from Europe and the west went in the New World, they encountered landscapes altered by tribal people for food production, even if they did not at first realize it. Tribes in the northeast had cleared vast tracts of forests in order to plant their crops. Southwestern tribes altered rivers to irrigate fields and tribes throughout the Plains burned forests and prairies to regulate forage for game. There is no denying that

Native Americans at the time of contact were skilled and knowledgeable hunters, fishers and horticulturalists, producing nutritious and healthy food often in abundance. Today, a great deal of the world's dominant crop species come from American Indian cultures, including such global diet staples as corn, potatoes, squash and tomatoes (Hays and Hays 1973). As explorations throughout the continent increased, the knowledge of the diverse peoples and cultures found throughout these lands was sought for many reasons—and included information on hunting, fishing, and farming in this new land. However, the contributions of American Indians and information about their rich agricultural history are often overlooked and agriculture in the Americas viewed as solely the purveyance of Euro-Americans. In an extensive review of agriculture in Native North America, Doolittle (2000) states that,

...painting aboriginal North America as pristine belies evidence that the continent was widely and densely populated, that these numerous people did transform the natural landscapes into cultural landscapes, that part of this transformation, in fact a very large part of it, involved agriculture, and that ancient farmers developed some ingenious production techniques (4).

Some scholars have argued that because the crops and methods of production used by Native Americans were so foreign to these early explorers and so different from European practices there was certainly reason for confusion (Mt. Pleasant and Burt 2010). However, the complex agricultural and subsistence methods of Native Americans were often treated with disdain instead of curiosity and where the food stores and yields produced by Native horticultural systems were admired, the associated husbandry practices were admonished. For example, in early writings about the Hopi, the American ethnographer Alfred F. Whiting described the Hopi people's extensive and millennia old agriculture as "embryonic" because it included wild and half-domesticated plants either sown directly or allowed to grow in otherwise carefully manicured crop fields (qtd. in Doolittle 2000, 24). Despite difficulties in understanding Native American farming systems, explorers and colonists alike benefitted from the foods produced by tribes throughout the continent. Some scholars have concluded that Euro-American expansion throughout North America would not have been possible without the horticultural knowledge of Native Americans and the extensive planting of corn which, once dried, was easily stored or carried (Engelbrecht 2003).

The Iroquois are one tribal group encountered by some of these earliest explorers, who were impressed by the quantity of food the Iroquois produced. Though there is some debate over when the Owasco—the ancestors of the Iroquois—began to farm, archeological evidence indicates the Owasco were a semi-sedentary, agricultural society as early as 200 CE and continued to farm for millennia (Dennis 1993, 45). At the turn of the 20th Century, several studies of Iroquois life focusing on the tacit and oral knowledge related to agriculture and plant cultivation were recorded by several anthropologists and government agents. Of particular note are the works of Arthur Parker (1910) and Robert Waugh (1916) in which the authors combined writings from early traders and missionaries with their own personal observations and investigations. This resulted in rich descriptions of Iroquois horticulture and culture. Arthur Parker was himself a member of the Seneca, another Iroquois tribe, and he provided in-depth descriptions of Seneca daily life, including language and religion that may not have been available to a scholar who was not himself Iroquois (Parker and Fenton 1968, 1-32). The ethnobotanical studies of Huron Smith (1924) and James Herrick (1995) emphasized the Iroquois' relationship with both wild and cultivated plants as medicine and as entities central to daily life.

Archeological investigations have also contributed to our understanding of the extent of Iroquoian agriculture (Smith 1992; Sasso 2003) and still more recent studies have sought to bring all of these sources together in order to provide a more general account of agriculture in the Americas before contact (Hurt 1987; Doolittle 2000). Extensive interviews conducted in the 1930s provided much insight into Oneida farming and gardening as part of the larger Wisconsin cultural landscape (Campisi and Hauptman 1988; Lewis and McLester 2005) and the Oneida themselves have begun recording parts of their oral history through tribally-funded programs and departments. In trying to understand the history of Iroquois food systems, it is important to start with the Iroquois Creation Story and cosmology because it reveals how deeply woven horticultural practices are within their culture. The extent of the influence of a horticultural subsistence on Iroquois culture is undeniable and reveals an extensive working knowledge of horticultural production.

Iroquois cosmology and ceremony

Iroquois cosmology brings to life the importance of crop plants to the Oneida and emphasizes an interdependence and interrelationship of humans with plant life (Cornelius 1999, 45). The creation story reveals beliefs and values traditionally held by Iroquois people within their cosmology or worldview. There are many versions of the Creation Story among the Iroquois and the Oneida version is said to be the most elaborate (Randle 1953, 629) and can take several days to recite in its entirety (Jourdan, Cultural Heritage Bulletin No. 15). The central tenants and actors remain the same—or are very similar—among the different versions and involve the fall of Sky Woman from the Sky World to a world of sky and endless, dark ocean. While falling, water birds come to help and a great turtle lets her rest on his back; the turtle becomes Mother Earth, or Turtle Island (Jourdan, Cultural Heritage Bulletin No. 15). In some versions, she brings with her soil from a celestial tree and in other versions, Muskrat and Beaver immediately begin diving for mud from the great sea and putting it on Turtle's Back (Herrick 1995, 6). Already, we see that Oneida people are beholden to the community of animals living together on the Earth.

Now living on Turtle Island, Sky Woman, who was pregnant with the daughter of Sky Chief, gives birth to the girl and she grows into a beautiful young woman. Eventually, this daughter gives birth to two male twins who, in fighting over which one will be born first, kill their mother as one rushed out his mother's side in order to be the first born. The twins lived and Sky Woman buried her daughter; from her body grew tobacco, and the Three Sisters: corn, a bean plant and a squash vine. The twins grew and became known as the Good Twin and the Evil Twin and found themselves equal in most things: the Good Twin bringing plants, animals, herbs, and rivers and the Evil Twin bringing thorns, poisonous plants, disease and monsters (Jourdan, Cultural Heritage Pamphlet No. 15). The Good Twin brings instruction on how to plant the Three Sisters and also brings four rituals—Feather Dance, Thanksgiving, Personal Chants and the Peach Stone Game—meant to honor creation and maintain a good mind.

Ceremonies of the Oneida can be divided into two broad categories: individual ceremonies emphasizing health and protection from disease, and community ceremonies emphasizing relationships and right living (Wallace 1978, 442). The Oneida Cultural

Heritage department describes eight communal ceremonies, taken from oral accounts (Cornelius, Jourdan and McNutt, Cultural Heritage Pamphlet No. 16). Several of these ceremonies relate in part or in their entirety to the relationships and knowledge used to grow, harvest or collect foods and medicines from the landscape. For instance, during the Moon Dance, the grandmother moon is acknowledged for her role in controlling the life cycles of all the different plants and for providing guidance about when to plant certain crops. In the Sun Dance, the intimate relationship between the sun and the earth is honored and asked to continue, so that the sun will warm up the earth to allow planting to be done. The Bean Ceremony and the Green Corn Ceremony especially give notice to the important role of these foods in Oneida life and culture (Gray in Johansen and Mann 2000, 53). In performing these ceremonies, Oneida provided thanks and honored these crops while asking these crops and animals to continue providing for the Oneida people.

Rituals which revolve around a horticultural cycle are part of a world view shared among many Native groups throughout the Americas, including the Iroquois (Engelbrecht 2003, 4). Common within this worldview is a certain intimacy between humans and the natural world, which has both animate and inanimate beings and entities. As early Iroquois ethnographers noted, delineations between beings were often fluid. For instance, the Iroquois word *ongwe* signifies “human being” but also contains the concept of malleability—between all beings and from which all things were made, from thunder and rain to plants and animals (Dennis 1993, 21). This is a very intimate relationship and rituals maintain balance between the Oneida and the Three Sisters at the individual and the community level. The relationships are *reciprocal*, implying, for instance, that harming the natural world in order to produce these foods one year disrupts this tenuous balance; acting in such a way would not be responsible to the people or to the natural world. The detailed descriptions of Oneida ceremonies provided here come from a modern account recorded by Oneida Cultural Heritage workers and demonstrate the resurgence or reconnection of knowledge of the natural world and subsistence as part of traditional ceremonies—traditional religion—practiced today.

It is important to note that Oneida people today practice a wide variety of religions and may or may not choose participate in traditional ceremonies. While Oneida are free to

practice their religion of choice today, all Haudenosaunee share the Creation Story and these ceremonies, or some form of them, as a common ancestral history developed over millennia. Beginning with the Assimilation Era in the early 1870's, many Native communities were persecuted—and in some cases jailed—for practicing their traditional religions. As a result, many religious practices were forced out of existence, or, at best, driven underground where they were practiced in secret (see Nabokov 1999, 170-174). Some instructions or knowledge related to agriculture and subsistence contained within these ceremonies was lost during this time. However, the American Indian Religious Freedom Act passed in 1978 by the US Congress granted Native Americans the right to practice their religions free from prosecution or harassment (Oswalt 2009, 54).

Social roles and village life

Oneida communities were historically organized around the subsistence patterns structured by their worldview or cosmology (Cornelius 1999, 73). Iroquois oral history also tells us that corn played a key role in establishing agriculture as the major economic enterprise of their society (Johansen and Mann 2003, 66). By 1000 CE, corn was a staple crop among the Iroquois and individual tribal nations were developing into a large-scale political organization, which would later evolve into the powerful Iroquois Confederacy. A reliance on agriculture dictates a more sedentary lifestyle, organized by a set of commonly held practices, rules and norms, and including politics and religion; the Iroquois traditionally made no distinction between these two entities.

As the Iroquois became more dependent on agriculture, villages grew into towns with more-sedentary longhouses defended by the men and surrounded by extensive crop fields and orchards which were maintained by the women (Wallace 1978, 442). Within these settlements, Iroquois society was organized through matrilineal lines and followed a clan system. Women were responsible for the bulk of the agricultural work while men hunted, fished and gathered foods (Waugh 1916, 9). Hunting and fishing would often take men away from the village, as would other duties like war parties or diplomatic missions. Women also fished, and cooked and prepared the foods that they grew or which their family obtained from hunting. Beginning with the agricultural fields, women in Iroquois culture played vital roles at every level of society, from their family, clan, tribe, nation and confederacy (Tooker 1978,

464). Lineage is traced through the female side of the family and each family lineage controlled and cultivated a designated piece of land, with uncultivated lands indicating boundary lines (Hurt 1987, 66). The oldest woman in each lineage controlled the family's land and other women in the family had rights to a plot of land within the field. If the village moved, the village chiefs—appointed by these head women of the tribe—would assign new fields to each family based on their food needs. Within this individual plot system were also communal lands and the Iroquois heavily emphasized that no one starve, that every person's needs be met (Parker 1910, 25). The Huron, a close neighbor of the Oneida, grew enough corn to provide a two to four year surplus and additional corn to trade (Hurt 1987, 34). In this way, the communal fields guarded against crop failure in the future; these fields were also organized by women. Parker (1910) and Waugh (1916) both pay great detail to the organization of women into planting guilds.

Every year, the women of each settlement would elect a matron responsible for organizing the women's work in the communal fields, including planting, cultivation and harvesting (Parker 1910, 24). Women who owned individual fields, along with their husbands and relatives could form a "mutual aid society", which also selected a matron to oversee the planting, cultivation and harvesting of each field (30). The matron would inspect each field and hear reports, using this information to organize groups of women to plant and cultivate each individual field as needed. The owner of the field was responsible for feeding the group of women, and the woman of the household worked in her field as well as with the group in others' fields. In this way, the women knew who was working and how much so that food could be distributed accordingly; working together also ensured that everyone would have enough to eat (Parker 1910, 24-31). Cultivation in groups were known as "hoeing bees" and when it was time to harvest the staple crop, corn, "husking bees" were organized in much the same way, with the matron organizing the work days. The owner of each field was again responsible for feeding the day's workers. Harvest bees tended to be much larger and involved everyone—all the men, women and children—in the community working together to harvest, husk and prepare the corn for storage.

In addition to corn harvesting, men also cleared the fields by girdling the trees in the year prior to when it would be planted, returning the next year to burn the trees and clear the

field of any debris (Parker 1910, 21). Accounts of women's field work at the turn of the century indicate that women enjoyed their work in the field. Mary Jemison, a famous white captive of the Iroquois, describes the work of women as, "...not severe...In the summer season we planted, tended and harvested our corn, and generally had our children with us; but had no masters to oversee or drive us, so that we could work as leisurely as we pleased" (qtd. in Parker 1910, 24). The Iroquois tended to many different tree crops such as fruits and nuts, and planted a wide variety of fruits and vegetables. Of primary importance to Iroquois survival are corn, beans and squash and details of how these crops were planted demonstrate a rich agricultural knowledge acquired and maintained over generations.

Corn cultivation, storage and uses

It is hard to overstate the importance of corn, beans and squash—the Three Sisters—to the Iroquois and to other tribal nations throughout the Americas over many ages. This long history has allowed for the diversification of each crop into many different varieties adapted to local growing conditions, and which are cultivated for different uses. Some have called corn "the breeder's delight" because corn is monoecious, meaning it has both male and female flowers on each plant, and produces fruit (grain) the year it is planted (Eames-Sheavly 1994, 3). In his work with the Iroquois at the turn of the 20th Century, Waugh (1916) described over 19 corn varieties and 60 varieties of beans. Parker (1910), however, noted at the time of his study that "few authorities agree as to the varieties of Indian corn" (41). In general, corn can be described by when it is ripe, either early or late; by its use—for example, as a flour corn; by the cob size or grain physical characteristics; and by color. Today, corn is typically divided into six "races": popcorn, flint, dent, sweet, soft or flour corn, and pod or grandmother/father corn. There are even more varieties within each race (Eames-Sheavly 1994, 4). The Iroquois planted corn varieties from each race and each had a specific use. In his work, Parker also noted the planting of a white flour corn, which in its description seems much like the heirloom white corn grown in Oneida today.

An old Iroquois tradition is to plant corn when the first oak leaves are as big as the red squirrel's foot (Waugh 1916, 21). Corn was typically planted with squash and beans in small hills or trenches spaced five or six feet apart. Field preparation and cultivation was done with pointed sticks and hoes made of bone and wood (Parker 1910, 24-29). Fertilizers

were not commonly used as this method of planting together, or intercropping, helped maintain soil fertility. Burning debris in the fields also provided nutrients for the plants and maintained soil health. Fields could be cultivated this way for up to 25 years before reductions in yield were so great the village would cultivate new fields, allowing the current field to become fallow. Seed soaks, or “corn medicine” made from different plant materials, such as roots from common reed (*Phragmites communis*) or bottlebrush grass (*Hystrix patula*), were used to deter crows and other pests from eating the seed once planted (Waugh 1916, 18). When ready, corn was harvested into baskets and taken to a central location, either in the field or near an individual’s home, where it was husked and either braided for hanging or readied for storage in bins, or in underground caches, often lined with bark (Waugh 1916, 40-44). At each stage of planting, cultivation and harvesting, ceremonies were conducted to give thanks and ask for a successful season and the safety of all workers.

In addition to being an important source of food, corn was used for many other items essential to the Iroquois. From the stalk, a variety of containers, children’s toys and fish line floats were made. Food can be prepared in husks; they can be used as mattress or pillow filling; braided into door mats or mats for sleeping on; used to light lamps as kindling; or in ceremonies as a means of sprinkling water; or woven into masks; braided into string or rope, or used as thread; or made into baskets and husk bottles; baby hammocks; or corn husk dolls—the Iroquois uses of corn husk seem limitless (Parker 1910, 80-86). Many medicines were made from corn as well. Corn silks were a powerful medicine used by women (Parker 1910, 86). Juice was extracted from the stalk and used in a medicinal lotion to treat wounds; the stalk itself became the medicine bottle (Fussel 1992, 241).

The Three Sisters and corn production in particular provided a good life for the Oneida and the Iroquois. However, as individual tribal nations of the Iroquois were forced onto different settlements after the Revolutionary War, their land base became considerably smaller than their homelands which encompassed most of what is now the state of New York. Yet no matter where the Iroquois went, they gardened and farmed. Under the instruction of US Federal policy, many tribes, particularly those already forced into reservations, began practicing western style farming with various degrees of success. In the transition to western farming, the skill of the Iroquois as horticulturalists was at the same

time admired and admonished—and later ignored as the growing United States demanded more and more Iroquois territory. Beginning with early European contact in the 1600's, the Oneida experienced rapid changes to their social and political organizations, settlement patterns and subsistence practices. This process is described in more detail in the next section.

From a subsistence to a cash economy

“The natives...’raise an abundance of corn and beans, of which we obtain whole cargoes in sloops and galleys in trade...Although little can be said in favour of their husbandry, still they prefer their practices to ours’.”

(Adrian van der Donck, seventeenth-century Dutch colonist
qtd. in Dennis 1993, 18)

Writings from early encounters with the Iroquois demonstrate the extent to which the tribes were successfully farming their territories, and doing so with practices very different to European methods of production. The Iroquois Confederacy was an impressive, politically-savvy entity and the Iroquois tribes initially profited from their location in what is now the state of New York in their dealings with the French and British (Wallace 1978, 442). The Oneida began to sell and trade furs, game and other items desired by these early Europeans. The Oneida were the smallest of the Iroquois tribes and in the 1600's lived in one settlement of about 80 longhouses; this settlement was destroyed by a French-Canadian expedition in 1696 (Johansen and Mann 2000, 225). As European immigration continued, any and all lands occupied by the Iroquois became some of the most sought after commodities in the New World. Through treaties, with the British, French, and with the United States after the Revolutionary War, the Oneida—indeed all the Iroquois—were restricted to an increasingly smaller land base. During the Revolutionary war, the Oneida sided with the colonists and famously aided Washington's troops at Valley Forge, providing corn to his starving men (226). However, immediately after the war US troops burned all known Iroquois villages, as described in this famous account from Major General John Sullivan:

The quantity of corn destroyed, at a moderate computation, must amount to 160,000 bushels, with a vast quantity of vegetables of every kind...I flatter myself that the orders with which I was entrusted are fully executed, as we have not left a single settlement or a field of corn in the country of the Five Nations.

(Journals of the Military Expedition of Major General John Sullivan against the Six Nations 1779, published 1887 and qtd in Fussel 1992, 123)

By 1784, the Oneida had lost nearly all territory in their homelands and were eventually placed, through treaties, into reservation communities by the US government. Each community functioned independently and integrated with white settlers to various degrees, initially living in peace. Oneida commonly interacted with missionaries and Oneida Episcopalian and Methodist churches were formed during this time period as well. However, the loss of land caused great disruptions to the social and political order as traditional subsistence patterns required a larger land base; for instance, to conduct hunts. Where there was enough land for the women to farm by traditional means, the men had little to do because there were no more war parties, diplomatic missions had become an annual meeting with an Indian agent sent from the US government, and there was less land to hunt (Wallace 1978, 442-449). Within a short period of time, these reservations deteriorated into what observers at the time called “slums in the wilderness” (443).

In adapting to European farming, problems arose because these practices often created conflict within the traditional social roles of Iroquois culture. Western society viewed the role of men as the proprietor and farmer of his property which disrupted the family life maintained in Iroquois society through maternal lineage. Furthermore, farming and horticulture were traditionally women’s work and there was a sense of disgrace on the part of Oneida men being forced to do this type of work. Lastly, a traditional Iroquois system of divorce was not accepted by western society because it did not support a family functioning as an independent economic unit (the nuclear family), living on what they raised and sold. Alcoholism also increased at this time and commodity foods, or foods supplied by the US government in exchange for land, began to replace traditional foods both of which took a negative toll on the community (Wallace 1978, 442-449).

The transition to western agricultural development marked a crucial turning point in the long procession of policies which eventually led to the displacement of the Oneida from

their homelands in New York. The fact that the Iroquois were a horticultural people prior to this era was consistently ignored and some scholars claim this was a means of justifying the acquisition of Indian lands.

Thomas Jefferson and others solved the dilemma of how to take Indian lands and still deal honorably with them by determining that having too much land was an obstacle to Indians becoming ‘civilized’. Ignoring the role of agriculture in Eastern Woodlands societies, they argued that as long as Indians had plenty of land they would continue to hunt rather than settle down as farmers...” (Calloway 2008, 191).

As a result of increasing pressure to relinquish land to the colonists, in the early 1800s some Oneida moved to territory in the western Great Lakes region, in what would later become the state of Wisconsin.

The formation of the Oneida Nation of Wisconsin

Four major forces have been cited for the removal of some Oneida to Wisconsin (Cornelius 1998). First, policies and treaties of the U.S. government steadily undermined the Oneida land base and culture. Second, New York State also sought to remove all Indians from the newly-formed state through treaties. This treaty-making happened rapidly; for instance, in just one year, 1802, the state made two separate treaties with the Oneida. Third, the Ogden Land Company and the War Department sought Oneida territories for trade access and economic development. Lastly, the Oneida, and all Iroquois, had by the 1800’s already been facing pressures of assimilation for centuries and white church leaders sought territories for the Oneida where they could have a new start. All of these factors led to some Oneida agreeing to the requests of state, federal, and church leaders to leave their ancestral lands.

Through negotiations sanctioned by the U.S. and led by church leaders, the Oneida made a treaty with the Menominee Nation to occupy some of their territory along western Lake Michigan (Lewis and McLester 2005, xvii-xli). Beginning in 1822, Oneida left for this territory in three factions (Hill 2009). Most were reluctant to leave, which is reflected in these waves of migration; however, the divisions between each of these factions, “had at their core a controversy over the degree of acceptance or rejection of white society” (qtd in Lewis and McLester 2005, xx). Over time, Oneida adjusted to their new territory and the Oneida living on the 65,000 acre reservation in Wisconsin came to be known for their agricultural production and the reservation had a saw mill, a grist mill, and blacksmith’s shop, all owned

by Oneidas (Johansen and Mann 2000, 226-227). During the Civil War, the Wisconsin Oneida again supported the war effort, siding with the Union troops. However, it was during this time that forested areas on the reservation began to be clear-cut by white landowners, who at times took advantage of Oneida families that needed cash income after their main wage earners had been killed in the war. This was the beginning of the rapid loss of Oneida control over reservation land.

The Dawes Allotment Act of 1887 also had a devastating impact on the Wisconsin Oneida's land base. As an assimilation era policy, one of the goals of allotment was to assimilate Native Americans into dominant society through individual land ownership, rather than allowing land ownership and use collectively as a tribal nation to continue. This policy changed cultural practices, including agriculture, language and religious practices, and drastically changed the Oneida way of life (Peterson 2005, 23-26). Deeds were issued to individual families and the remainder of the land became the responsibility of the Bureau of Indian Affairs (BIA) agent on the reservation to do with what he pleased. The BIA was entrusted to protect Indian-owned land from waste or abuse, and to secure the highest lease income or purchase value for the remaining land (Smitman 1998, 183). As a result, much of the non-allotted land was sold to railroad and timber companies or to white individuals. Even more land was lost as the original deeds expired, allowing Oneida who were often times very poor to sell their land to non-tribal members or to lose their land for failure to pay taxes. Taxes were a foreign concept to many Oneida and, further, there are several instances of tax letters and eviction notices not being delivered to Oneida land owners; as a result, their land was taken and sold. Eventually, the tribe retained ownership of less than 1% of its original reservation territory as their reservation land base went from 65,430 acres in 1838 to 200 acres in 1967 (Metoxen, Cultural Heritage Pamphlet No. 6).

Despite these changes, the Oneida continued to live in the area and maintained gardens to feed themselves and farming remained a primary economic activity of both Oneida and white land owners within the reservation. Because gardening and farming remained important economic activities within the community, they became part of the shared cultural fabric of Oneida and non-tribal members (primarily whites), who lived together on the reservation (Lewis and McLester 2005). Individual tribal families bought

back or rented land as they could. For Oneida, these small farms primarily supplied a family with their needs, with cash-crops or crops in excess of the families' needs sold. Products such as corn bread and home-canned goods were also sold for income. Over time, larger companies such as the Larsen Canning Company and Augusta Dairy began to contract with Oneida farmers to produce certain goods such as cucumbers, beets and cow's milk. Timber, wild berries and game were also important resources; however their use declined over time as Oneidas lost reservation lands and white populations increased, stressing these resources. Traditional techniques, such as planting by the moon, and maintaining Three Sisters gardens continued throughout this time (Campisi and Hauptman 1988; Lewis and McLester 2005). Still, the problems of impoverishment, ecological destruction and limited access to land continued to plague Oneida living on the reservation. The Oneida people were ready for change. And change did come, through the perseverance and creativity of the Wisconsin Oneida and through a series of federal policies designed to promote self-determination.

The Oneida Nation of Wisconsin today

Beginning in 1934 the Oneida people reformed their government under the auspices of the Indian Reorganization Act (IRA) which encouraged tribes to adopt western style government structures in exchange for access to different federal assistance programs or status ("History" 2011). The Oneida were primarily interested in the promise of federal support to buy back land within their reservation territory and reformed their government under an IRA Constitution. The Oneida at this time were still very poor, reeling from the nationwide depression and missing many of its community members who left the reservation to fight in different wars (Lewis and McLester 2005). It wasn't until 1977 that the Oneida government formed the Oneida Land Office, but by 1978 the tribe had already regained control of 2,097 acres within the reservation. It was around this time, in 1976, that a small group of Oneida women formed the Oneida Bingo Operations at the Oneida Civic Center; this paved the way for economic development and provided money to purchase land and provide services to the community ("Complete timeline of Oneida history" 2010).

The Oneida Nation of Wisconsin today has roughly 15,000 enrolled tribal members and about one-third of these members live on or near the Oneida reservation (Lewis and McLester 2005, xvii-xli). By 1997, just one hundred years after allotment, the tribe had

bought back 8,960 acres on the reservation and individual tribal members owned an additional 1,626 acres (Metoxen, Cultural Heritage Pamphlet No. 6). This number, though not known exactly, continues to increase today. The tribal government has developed into one of the largest employers in the region and operates a variety of programs that provide services and opportunities to the community (Hill 2009; Lewis and McLester 2005, xvii-xli). Many of the programs are funded through revenue from tribal enterprises such as the Oneida Bingo and Casino or the Oneida One Stop convenience stores. Tribal programs and services include schools, a museum and public library, cultural historians, language programs, farming operations, a food pantry and food distribution sites, business incubation and entrepreneurship programs, environmental regulation and a conservation department, a newspaper, bus services, housing, social services and health care (see <http://www.oneidanation.org/>).

The Oneida Nation has also taken great steps towards recreating a local food system that is economically, ecologically and culturally viable including farming areas of land they purchase, creating retail stores on the reservation for local foods, and providing support for culturally-based programs focusing on traditional foods. In 1994 the Oneida Community Integrated Food System (OCIFS) was formed by the tribal government in order to integrate local food producers and resources, improve the community's quality of food, provide information on diet-related health risks, and increase employment and opportunities for youth (VerVoort et al. 2008). As a result, more people are participating in the local food system through gardens, farms, retail stores, farmers' markets and barter systems, and the community as a whole is making great strides towards food sovereignty.

The work of OCIFS today is to promote food sovereignty on the reservation. OCIFS defines food sovereignty as:

...the right of peoples, communities and countries to define their own agricultural, labor, fishing, food and land policies which are ecologically, economically and socially appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and societies.

(Political statement of the NGO/SCO for food sovereignty,
qtd in VerVoort 2010)

Programs that are working together under the OCIFS umbrella to promote food sovereignty are fairly diverse and include the Oneida Nation Farm, the Oneida Apple Orchard, Tsyunhehkwa Center and Cannery, the Oneida Food Distribution Program (food pantry) and the Oneida Community Health Center (VerVoort et al. 2008). The Nation Farm plants and harvests corn, soy and hay crops on 4,000 acres of Oneida-owned land and raises a large herd of beef and a separate bison herd³. The Oneida Apple Orchard grows apples and vegetables on forty acres of land that is also tribally-owned. They also operate a retail store where beef and bison from the Nation Farm and the Orchard's apples and apple products like jam and dried fruit are sold. The Food Distribution Program serves as the Oneida community food pantry and provides education on healthy eating choices, as does the Oneida Community Health Center. OCIFS is also responsible for coordinating the Oneida Falling Leaves 4-H club and the large Oneida farmers' market, and is working to form a Food Policy Council in Oneida.

The Tsyunhehkwa ("life sustenance") Center and Cannery is a unique component of OCIFS and though it produces food which is sold in the community, Tsyunhehkwa is treated by the tribal government as a cultural program, rather than an enterprise like the Nation Farm and Orchard are. Tsyunhehkwa is a long-standing participant in OCIFS which encourages through demonstration and outreach services the use of traditional foods in a local food system. On their 85-acre certified organic farm they grow six acres of white corn which is sold into the community, graze eighty beef cattle and raise free range chickens for meat and eggs, and maintain an acre of vegetables, including beans and squash. As a result, traditional Iroquoian white corn is increasingly available within the reservation today. Foods are processed at the Tsyunhehkwa cannery and then sold at the separate Tsyunhehkwa retail store which in addition to Tsyunhehkwa's food, provides herbal medicines and has workshops on health and using the medicines. All three components—the farm, cannery and retail store—have workshops throughout the season on growing crops, processing and storing food, and identifying herbal plants for example.

³ For more information on OCIFS and each farm and program see <http://www.oneidanation.org/ocifs/>.

Collectively, these programs have encouraged participation in the local food system by raising healthy food, processing and selling this food locally at retail stores and farmers' markets, making it available through the food distribution program, and providing workshops and tools needed to raised a garden or store food. OCIFS and its members have also conducted significant assessment and analysis of food sovereignty and continue this work on the reservation today. This work honors the Oneida and the Iroquois as horticulturists while integrating with national efforts to find new ways to promote local, safe and healthy food, including traditional foods.

A desire to provide healthy food for its community members and reaffirm cultural identity led to the initial creation of OCIFS. While the reservation economy relies increasingly less on agriculture as a whole, the demand for local agricultural products that are produced in a sustainable manner are again spurring the Oneida to reinvest in local agricultural systems. The agricultural history of the Oneida demonstrates their ability and expertise in producing healthy food and medicine, often in abundance. The development of a local, profitable food and agricultural system that is safe, nutritious and ecologically-viable will rely on integrating the agricultural knowledge and cultural practices accumulated over time by Oneida, while including both old and new techniques. The Oneida have demonstrated time and again, such as with the purchasing of lands lost during allotment, that they have the ability to adapt to new conditions, persevere, and succeed. A thriving local food system may also serve as a reminder of the agricultural skills—and the strength of Iroquois social and political institutions—that Europeans first encountered on the shores of New York over 400 years ago.

Chapter Four

Study design and methods

A case study approach employing qualitative data collection methods was used to analyze the knowledge, skills, benefits and qualities of traditional foods and food system revival. Case study approaches are used across disciplines by researchers seeking to illuminate phenomena through the detailed study of their occurrence in a particular context (Mills et al. 2010). Case studies are well suited for research on food, or food studies. Miller and Deutsch (2009) describe food studies as inherently interdisciplinary and propose that food as a methodological tool itself can be used to gain insight into other important issues such as identity and history. While food is not the main focus of this study per se, viewing food as a methodology reveals the complexity of food and food systems and the need for methodology that allows a holistic approach. Robert Yin (1994) proposes that the case study method should be used when research questions focus on “how” or “why”, when an investigator has little or no control over the events studied, and when research focuses on a “contemporary phenomenon in a real-life context.” Other qualitative research methods, such as ethnography, phenomenology or grounded theory, use single data sources (for example, long interviews or observation over an extended period of time) in order to provide descriptions, analysis and interpretation of meanings and themes related to the research questions (Creswell 1998). I chose a case study approach primarily so I could describe the complexity of food system revival in Oneida through the in-depth analysis of multiple sources of data.

This case study is reliant on the stories, practices and beliefs held by members of the Oneida community, and takes an in-depth look at the knowledge and skills used by well-known gardeners, farmers’ market growers and food system advocates. There has been little application of indigenous knowledge as an approach to or lens with which to view agricultural or food system development within native communities in the United States. As a result, this case study is primarily an exploratory one because this research begins to give definition to the problems, players and perceptions of the process of rediscovery specifically by looking at how knowledge is created and used (its function) in reviving the local food system in Oneida (see Miller and Deutsch 2009). This case study also seeks to articulate a

unique Oneida worldview and how and why food system revival matters to Oneida community members; this makes the study somewhat explanatory as well. The main focus, however, remains on the telling of people's experience and beliefs and as such is primarily exploratory.

The study began in late 2009 with a few preliminary phone calls to Jeff Metoxen, the manager of Tsyunhehkwa, and Ted Skenandore, Tsyunhehkwa's agricultural supervisor. As we got to know each other, they both agreed to work on developing a study with me and serve as an advisory council to the project. Whenever I came up with new ideas or had questions, these two served as my go-to people; whenever they thought of something to explore they would call or email me. I also sought their approval of the research questions and methodology throughout the research design and before beginning data collection. Over time, Bill VerVoort, the manager of the Oneida Community Integrated Food Systems (OCIFS) initiative also became a source I relied on for insight into how to conduct the study. Dr. Carol Cornelius, the recently-retired manager of the Oneida Cultural Heritage Department, also helped in the design and focus of this study by sharing with me her work on Iroquois foods and her joy in planting and collecting heirloom Iroquois corn, beans and squash.

In January of 2010 I submitted a graduate student grant application to the Sustainable Agriculture Research and Education (SARE) program with the approval and endorsement of both Jeff and Ted. The project was not funded, but by this time I already felt committed and excited to do the project so decided to continue. In May of 2010, I received approval from the Institutional Review Board (IRB ID 09-617) to conduct the study with the Oneida, and in that same month went to Oneida for the first time to begin an internship with Tsyunhehkwa. As part of the internship, I worked alongside Ted and the staff of Tsyunhehkwa as they began their season of planting, community outreach and workshops.

The internship lasted just over three weeks and formed the basis for participant observation, and allowed me to make contacts with well-known gardeners and food system advocates. From here, a snowball sampling technique was used to find a total of eight interview and seven focus group participants. Several staff members of Tsyunhehkwa, as well as Bill VerVoort of OCIFS, all emphasized that they would like to be able to share what

has worked and not worked in Oneida with other communities interested in food system revival. As a result I included questions and analysis of different challenges and proposed strategies for food system revival as the study progressed. In the next sections, I describe in more detail the participant observation, interviews and focus groups which comprise the majority of the data used in the study. A review of relevant historical documents was also conducted and is described in more detail as well.

Participant observation

I collected ethnographic data during a three-week volunteer internship at the Tsyunhehkwa farm from May 16th to June 7th of 2010 and during four shorter return visits to the Oneida reservation in July, August, September and during the week-long Harvest and Husking Bee held by Tsyunhehkwa every October. During the Bee, the community gathers to harvest the program's six acres of white corn by hand, then husk, braid and store the corn for drying. During a fifth trip in November, I conducted two focus groups and I was able to participate in some preparation for Thanksgiving meals with a few members of the community.

During participant observation, data were collected about Tsyunhehkwa's protocols and procedures through participation in the general activity of the program from day to day. Observations were also made on patterns of interaction between different community members who are actively involved in the local food system. These community members include workshop participants, volunteers, instructors, employees, home-use gardeners, market-growers and farmers' market customers. Information about occupation, age, length of time in the community, length of time participating in the local food system, as well as thoughts and feelings about Oneida's food-related programs, local foods and traditional practices were also sought. All information was recorded in detailed field notes in a way that protected the identity of community members.

I also attended Tsyunhehkwa staff meetings, met with community groups such as the team working on the Turtle School garden, and went out in the community with Tsyunhehkwa's outreach staff person as he tilled three large community garden plots as well as individuals' home gardens. I met with staff from the Oneida planning department and the conservation department, as well as with staff and managers of the Oneida Apple Orchard

and the Oneida Nation Farm. I attended the Oneida Farmers' market and volunteered at the Tsyunhehkwa retail store and cannery for a day each (see Figures 3 and 4 for maps of the reservation). Collectively, these data helped me discover who, how and why individuals participated in workshops, farmers markets and other opportunities offered by Tsyunhehkwa and the Oneida Apple Orchard, in particular, as part of the local food system. From these experiences, I was also able to refine my interview and focus group questions and began to identify and make contacts with people to interview or invite to participate in a focus group.

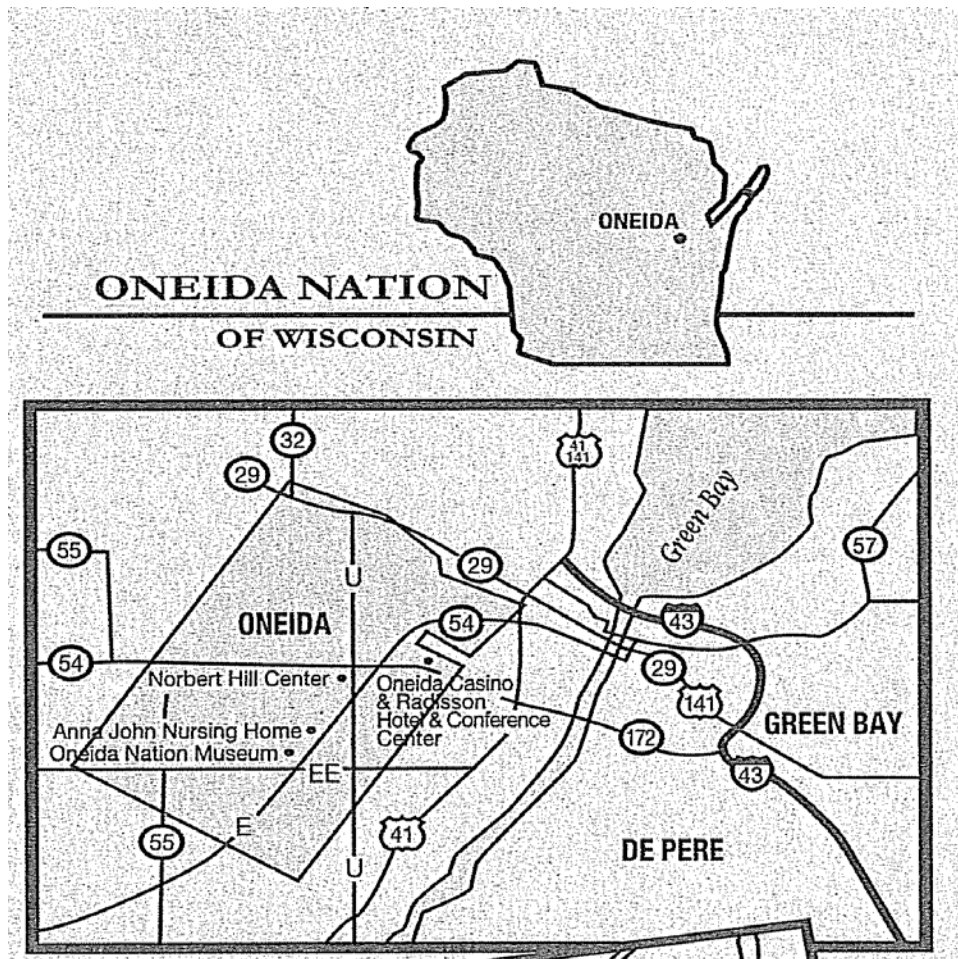


Figure 3. Map of Oneida Nation of Wisconsin reservation (Oneida Nation of Wisconsin Booklet, Oneida Tribe of Indians of Wisconsin).

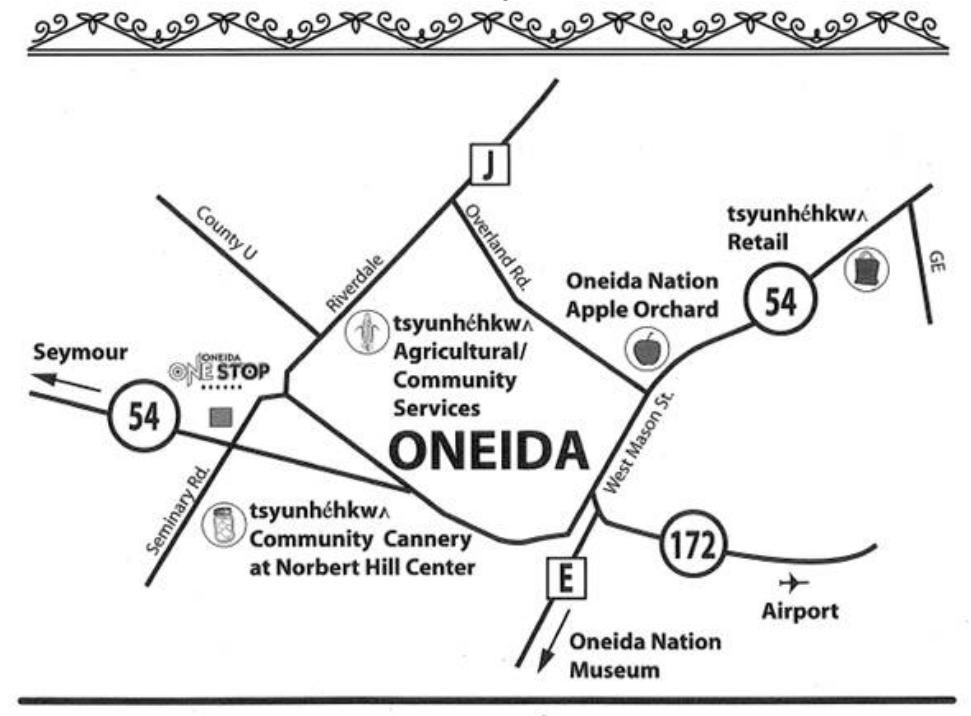


Figure 4. Close up map of Oneida Nation with key food production and distribution sites (VerVoort et al. 2008).

Interviews

Interview participants were chosen based on their knowledge of gardening and interest in local food system development. During the internship in May and June of 2010 I began meeting people who were growing large gardens—sometimes up to an acre and a half. In conversations it became clear that these people had extensive knowledge of how to produce and store foods and showed interest in the local food system, for instance by attending workshops or farmers' markets. Typically, I would wait until the second time I met someone to introduce the project in more detail and ask if they would be willing to participate in an interview; other times I would ask during our first conversation or meeting. If they said yes, we exchanged phone numbers and I called within a few days to touch base and set up an interview. Sometimes interviews were scheduled a few days in advance; other times they were scheduled up to two months in advance to take place during a return visit. I found that it was more difficult to schedule interview (or focus groups) too far in advance, and I also found it easier to arrange future meetings in person, rather than over the phone.

In addition to setting up a meeting time, I would also ask if the person could recommend anyone else, tribal member or non-tribal member, who they thought was an

“expert” gardener, or who had a committed interest in local and/or traditional foods. Often, the person would recommend someone and could provide a phone number for me to call and arrange a meeting. Sometimes they knew of someone but did not have their number and I would have to ask around to see if anyone else had the contact information for this person. This same process was used to find focus group participants. This technique is referred to as snowball sampling technique and is useful when members of the sample group are likely to know others like themselves (Weiss 1994). At the same time I was asking interview participants for contacts they thought would be good candidates for the study, I was also encouraged by the advisory council to seek out both tribal (Oneida) and non-tribal members in order to understand the current state of knowledge, practices and beliefs within the community because the reservation is “checkerboard”. In doing so, I feel that the sample is indeed more representative of the community and allows for some comparison between tribal and non-tribal members’ experiences in food system revitalization.

Eight interviews were conducted in total and lasted anywhere from one to two and a half hours. I followed a semi-structured interview schedule, or list of questions, which was designed to address both the knowledge and skills related to food that community members had, as well as the benefits and qualities of local and traditional foods (see Appendix I for a list of questions). These questions were modeled in part after the work of a former graduate student at Iowa State University who studied soil knowledge among farmers in the Zuni Pueblo, New Mexico (Pawluk 1995). If a participant had more knowledge related to conservation practices, food storage or seed saving, for example, I would allow the interview to focus on the person’s topic of expertise. However, I was still able to ask all of the questions or cover all of the topics with all of the interview participants. If I needed to review a response for clarification, or had further questions I was often able to meet with the participant again in-person to ask informal follow-up questions, or could reach the participant by phone or email. Key information about each participant is presented in the chart below, including whether the person is or is not an Oneida tribal member (Table 1). If the participant is a tribal member, their Clan is also given. Names were changed in order to protect the identity of participants.

Name	Age	Sex	Clan (if tribal member)	Attend Longhouse Ceremonies	Had a garden or farm as child	Location of current garden	Saves seed	Stores food
Mark	58	M	Turtle	Unknown	Yes	Rents land	Yes	No
Steven	55	M	Wolf	Yes	Yes	Rents land	Yes	Yes
George	~88	M	Turtle	Unknown	Yes	Owens home	Yes	Yes
Beth	68	F	Non-tribal	No	Yes	Owens home	No	Yes
Charles	69	M	Non-tribal	No	Yes	Owens home	No	No
Alex	42	M	Non-tribal	No	Yes	Owens home	Yes	Yes
Jean	43	F	Wolf	Yes	Yes	Owens home	Yes	Yes
Joey	49	M	Turtle	Yes	Yes	Owens home	Yes	Yes

Table 1. Summary information of interview participants.

Focus groups

Two focus group sessions were conducted on the Oneida Reservation in November of 2010. They were held at a local coffee shop whose owner, Jill Martus-Ninham, has a dedicated interest in local food systems and traditional foods. She agreed to host the focus groups after the shop was closed for the day and also made food—corn soup, apples, pumpkin bread and coffee—which had been donated by Bill VerVoort, the OCIFS coordinator. The goal of these groups was to understand why people participate in the local food system, their goals in participating, and the cultural interactions occurring between different groups, whether of different ages or ethnicities, for example, around local food. Opinions and attitudes towards indigenous knowledge and Oneida history and cosmology as they relate to agriculture and the local food system were also sought. In order to gain insight into the history of land use, food production and dietary change, and related knowledge and skills, one focus group was held with just elders (people over the age of 55). The second group was held with just women because while many of the gardeners interviewed were male, women had a very strong presence as advocates for local and traditional food system

revival. The Oneida are historically a matriarchal society and women had, and continue to have, a large say in both political and economic spheres; women were also traditionally responsible for raising food while men hunted and fished. It was important to include women as a separate group if for no other reason than to honor this heritage and to see how their roles within the food system have changed. There was no overlap between focus group participants, meaning if an elder woman participated in the elder group, she did not participate in the women's group. Key information about each focus group participant is presented in the chart below (Table 2). Names were changed in order to protect the identity of participants. All focus group participants are tribal members. If the participant's clan is listed as "unknown" this indicates that the person is an Oneida tribal member but either did not give their clan or did not know for sure which clan they belonged to.

Name	Age	Sex	Clan	Attend Longhouse Ceremonies	Had a garden or farm as child	Location of current garden	Saves seed	Stores food
Josephine	78	F	Turtle	Yes	Yes	Owens home	Yes	Yes
Marie	74	F	Bear	Unknown	Yes	No longer gardens	Yes in past	Yes in past
John	88	M	Unknown	Unknown	Yes	Owens home	Yes	Yes
Samantha	50s	F	Unknown	Yes	Yes	Patio of apartment	Yes	Yes
Ashley	40s	F	Wolf	Yes	No	Owens home	Yes	Yes
Anita	40s	F	Wolf	Unknown	No	Owens home	Yes	Yes
Jacky	30s	F	Unknown	No	Yes	Owens home	Yes	Yes

Table 2. Summary information of focus group participants.

Document review

A review of publicly available data was also conducted throughout the study in order to triangulate some of the information given in interviews and focus groups and also to provide more historical context of the community as a whole. Documents were collected from the different member organizations of the Oneida Community Integrated Food Systems

(OCIFS) and focused on workshop and outreach materials. Examples include the OCIFS Cultural Activity Book, a coloring book on local and traditional foods, and a handout from Tsyunhehkwa on how to make a seed soak from white pine. Documents on the history and culture of the Oneida were also collected from the Oneida Nation Museum and from the Oneida Cultural Heritage department. These documents were all created within the last 20 years by different Oneida programs and are considered primary sources. Some press releases and newspaper and magazine articles were also used along with information from the Oneida tribal website and tribal paper, Kalihwisaks.

Data analysis

“Secondly, we now take this white feather from the eagle, the softest down of white feathers and we brush away from your ears all the dust that may have accumulated in your ears upon your travel here, so that you may be able to hear the words that our people convey to you and that you are able to understand clearly when you are asked to make a decision based upon what you are able to understand of the issue presented.”

(Excerpt from the Edge of the Woods or Handshake ceremony,
Bob Brown, Cultural Heritage Bulletin No. 19)

I began content analysis of appropriate documents and my field notes during the summer and fall of 2010. I engaged with the data in a way that allowed me to move back and forth between analysis and collection, which made it possible to ask new questions as they arose, and made data collection as a whole more meaningful. After a lengthy process of transcription, I began to analyze interview and focus group data in early 2011. I analyzed the interview and focus group data in three main stages: open coding, axial coding and some selective coding. Price (2010) describes open coding as, “the initial interpretive process by which raw research data are first systematically analyzed and categorized” (156). Open coding involves questioning, reflecting on and categorizing the actions, perspectives and statements of the participants. Concepts are identified from distinct events, incidents or words and are organized under different themes or labels. Axial coding was then used to relate categories to each other and to create and refine sub-categories from the data. Categories were typically something important to the participants and sub-categories the answer to any questions that arose about the categories. An example is the concept of “responsibility” and the varying levels of responsibility respondents articulated towards

different foods and practices which helped explain how and why responsibility was related to food system development. Selective coding was done to a limited extent in order to develop more abstract theories and concepts while remaining grounded to the data. Using the data to articulate an Oneida worldview is an example of selective coding.

In congruence with best practices for research in Native and other minority communities (Manriquez 2001), all information gathered, including interviews, focus group sessions and any pictures taken, have been made available to the interview and focus group participants and the advisory council in formats useful to their needs and in a timely manner. The advisory council has reviewed several drafts as well as the final analysis and has made changes and suggestions as needed. I was also available to the advisory council and to participants for questions at all times by telephone and through email. In reporting the data, I have chosen to interweave insights and stories collected from document review and during participant observation with the interview and focus group data. In each section, I outline what the primary sources of data were in the section; for instance, by stating if a theme arose primarily from focus group data. It is my intention that this transparency brings greater validity to the data. Other issues related to the validity of the research were also taken into consideration during the research design and during data collection, to be described next.

Validity

This study was dependent on building trusting relationships and working closely with representatives from the tribe and the community to assure that the research was conducted in a culturally appropriate and respectful manner. Insights from and connections made through the informal advisory council, as well as the use of snowball sampling helped me gain trust and access within the community. Validity concerns remain, however, and include the generalizability of the small sample size when attempting to understand something as complex as a local food system and in particular, indigenous knowledge systems. My own bias and life experiences may also make it difficult for me to understand what is said or meant in the context of an indigenous worldview, as present in the local food system. I can recall several times driving around the reservation, going from one meeting to the next activity and telling myself to relax and let information soak in; that I was likely not going to be able to make all the connections among the concepts presented. Part of this process, of

making connections and gathering information into themes, included deep listening; asking questions was also very important in not extrapolating or misunderstanding what was being said. Themes in the data were triangulated by interviewing multiple people following the same semi-structured outline (Appendix I) as well as by referencing appropriate documents. Reviewing information with participants and the advisory council has also helped ensure that the meanings and conclusions I propose are clear and are grounded in the data. Careful consideration was also made to match the research questions with the appropriate unit of analysis, moving from the individual to the community level.

Chapter Five

Knowledge and skills of growing, harvesting and eating food

Corn was one of the most important crops to the Oneida historically, and today the growing, caring for and consumption of white corn remains a central component of gardening to Oneida community members. In addition to corn, gardeners today raise a wide variety of crops, and they know how to care for, store and eat the abundance and diversity of foods coming from their gardens. For many, these foods contribute a large part of their diet. Hunting, fishing and collecting wild foods also make important contributions to the diet of some of the participants in this study. Processing, storing and preparing these foods are often seen as being as important as successfully raising or collecting them. This small group of gardeners interviewed use and create knowledge in innovative ways, drawing on ideas and skills both old and new; this is the living body of indigenous knowledge used and formed in Oneida today. In the following sections, I describe the practices community members used to raise crops, store seed, hunt and collect wild foods and then explain how people preserved, or stored, the foods for later use. I then provide analysis on the accumulation and movement of knowledge through time and between people, as it relates to the Oneida food system. This chapter as a whole is very descriptive, and it is my intention that the voices of those interviewed are in the forefront of this narrative. I conclude with a discussion on the local worldview, or approach to gardening, that seemed to form the basis of how people made decisions in regard to their food, before placing these gardeners in the larger context of food system relocation happening in Oneida today.

Raising Crops

Crop selection

Respondents grew everything one could imagine in a typical garden, along with heirloom crops, such as tomatoes and the Three Sisters, corn, beans and squash. People selected what crops to grow based on taste; the history of a crop—whether grown by the Iroquois or a member of their immediate family; the ability of a crop to store well for eating over the winter; and crops needed for different ceremonies or medicines. As Jean said, “*How do we decide? We know we’re going to can salsa, we know we’re going to make tomato*

sauce, we know we want squash. We just go by what we eat and that's how we do it." There was also a lot of pride in some of the characteristics of the white corn which has been saved within the community for at least several decades. It was said to usually grow taller and fare better in varied environmental conditions, such as the 2010 growing season which was very wet. In addition to the white corn, a blue corn is also grown—the "*strain kept alive*"—because it is used in ceremonies at the Longhouse, as well by different Medicine Societies⁴. The Bear Bean and the Kahnawake, a Mohawk pole bean, were two of the most common heirloom beans grown. The Bear Bean was prized for its beautiful red flower and delicious flavor. All of these factors resulted in a variety of foods and an abundance of crop diversity in the garden.

Preparing the field

Gardeners also used a wide array of techniques to prepare their fields for planting and to care for their crops as they grew. Once established, smaller gardens were tilled by hand, though all reported using some kind of mechanical tillage, like a walk-behind rototiller or a small tractor with a cultivator, to establish their garden. Most used some mechanical tillage in their garden every year and many said they used the tilling service provided by the tribe through Tsyunhehkwa's outreach program. Through this program, Tsyunhehkwa staff will bring a small tractor with a pull-behind tiller to their house and till any area for \$10 (for tribal members) or \$15 (for non-tribal members). The three community gardens in the area were also tilled by Tsyunhehkwa. People were very familiar with their garden areas and most spoke extensively about how they picked out a spot for their garden and what soils they were growing in.

The dominant soil type in the region is a heavy clay soil, though some areas, particularly old lake and river bottoms, have sandy or sandy loam soils. Many respondents referred to soils using these classifications and preferred to grow where there was "good, black soil" though sometimes this soil was "too heavy" for crops, particularly in wet years, as was the experience in 2010. Much attention was paid to drainage in selecting sites for

⁴ Medicine Societies are traditional groups of Iroquois healers, and some of these groups are still practicing medicine today. For more information see *An Iroquois Source Book, Vol. 3: Medicine Society Rituals* by Elizabeth Tooker (1986).

gardens, and growers in the area, for instance melon or corn growers, were often referred to by their skill and also by the type of soil their farm is located on. Every respondent, regardless of garden location or size, emphasized the role of soil moisture and drainage, as well as the texture of soil and its organic matter content, using terms like “heavy”, “light” and “rich”. In areas with clay soils, ashes were used by some respondents to improve soil fertility. This is a technique that has long been used and which many today consider to be a traditional practice (as a researcher, I wonder how this practice came about and how it relates to the traditional method of clearing fields through burning and girdling any remaining trees, then burning again the next year [see Parker 1910]). Ashes from hard woods like oak (*Quercus*) were preferred, and it was once common practice to empty the ashes from a family’s wood stove in the garden. As George described, the use of good-quality oak ash was and always has been “his secret” to having a successful garden. More often, respondents had used this technique in their parents’ garden, but did not use it today, instead relying on compost, green manures, and mulches such as straw which are tilled-in every year. Sand was also used by some of the elder respondents to hold moisture in soils which were described as “heavy black soils”; this technique was learned from their grandparents.

All respondents also stressed that crop rotation was essential to raising healthy plants due to the differences in nutrient needs of each plant family, as well for disease control. Giving nutrients back to the field was emphasized, with most sharing the sentiment that since they were taking food from the field, they should return something back to the field, like the corn stalks, compost, or other plant material. Compost and manure were used by all respondents, with different preferences for types of manure (cow, horse, goat, chicken, etc) and an inclination for manure that was well-rotted so it would not “burn” the plants, or stunt their growth with a flush of nutrients. Growers preferred organic or natural fertilizers, but one grower used Miracle Grow, a popular chemical fertilizer, when planting tomatoes and peppers. Several people relied on their local farm co-op to find soil amendments, like soybean and alfalfa meal, lime or greensand. Gardeners would occasionally seek an outside person or program that provided soil testing services so they could determine what nutrients might be missing before they planted. However, all gardeners relied most heavily on

composting, crop rotation and emphasized building soil organic matter and rotating plantings every year over testing.

Planting and growing

Corn is planted in a variety of ways but is almost always planted in rows, rather than in the traditional mounds. Tsyunhehkwa's main crop is the white corn which was planted using a two-row seeder pulled behind a small tractor. Tsyunhehkwa staff emphasized that when growing the white corn, it was what you do in the first two feet of the corn's life that ultimately determines how it develops. They cultivate with the same small tractor and fertilize once with a fish emulsion spray when the corn is in the three-leaf stage. Home gardeners reported planting white corn and sweet corn by hand and both Mark and Charles had partnerships with larger growers who would plant corn with either a 2-row or 4-row seeder pulled by a tractor. In gardens, squash was often grown on the edge of the corn plants because their leaves act as a "living mulch" that suppresses weeds. Sweet corn was often planted in succession, with some gardeners planting every two weeks.

Though compost was the primary source of fertility for the plants, two growers also used fish emulsion (an organically-approved fertilizer made with byproducts of different fishing industries) on their corn field and on other plants as needed. Some planted their corn and other crops with suckers (small, fatty fish), burying the small fish deep, and then covering it with soil. The seed or transplant was planted on top of this. While this is considered a traditional practice, one respondent, a non-tribal member, saw it as more of a "utilitarian" practice and would remove the filets from larger fish he had caught to eat and then bury the remains in the garden.

Some people reported using companion planting techniques which helped them decide what plants to put next to each other. For instance, basil might be planted within or next to tomatoes in order to repel bugs. Except for the corn, gardeners planted everything by hand, in part because they felt the garden-scale planters did not do a good job of spacing seeds, or would "skip" seeds, leaving an empty space in the row. Once established, few people said they would water during the season. If water was needed, some reported just walking to the nearby creek to get water, while one grower, Beth, who grew produce to sell

at the farmer's market, would use drip line irrigation. However, due to what many called an extremely wet growing season in 2010, no one watered this year. Managing pests was more difficult in 2010, however, due to the wet conditions.

Pest management

The biggest pest issue people faced in all crops was weeds, though many expressed that weeds are simply a part of farming or gardening. Some used weeds to tell where to plant certain crops; strawberries, it was said, do best in soils where thistles are growing because the thistles either indicated or made available important nutrients for the berries. Still others enjoyed eating the weeds, such as lambs quarter (*Chenopodium berlandieri*)—also known as pigweed—or dandelion (*Taraxacum officinale*). A distinction between weeds brought by Europeans was often made in a joking light; for instance, dandelion may be referred to as “a gift from the Europeans.”

Crop rotation was also emphasized as a way to control disease. Several respondents burn vines of crops like cucumber and tomato which are known to harbor diseases. The whole plants are removed from the field and burned, or burned in the field and tilled under. One person burned a small area in his garden in order to promote native plant vegetation and provide habitat and food for native pollinators that would pollinate their garden crops. Striped cucumber beetle (*Acalymma vittatum*) and potato beetle (*Leptinotarsa decemlineata*) were also common pests, though most mentioned that these two pests had not been problems in the last few years. One insect pest, the black fly, was said to be common still and sanitation in the form of removing ripe fruit from fields was the main method used to control it, though some reported spraying a naturally-derived insecticide on occasion. Several people reported using marigolds to try and repel rabbits and other insect pests, such as cabbage worm. One respondent used ground black pepper to keep rabbits from eating his beans. The large containers of black pepper were bought at a local grocery store for a few dollars.

All respondents said they did not want to use chemical sprays to control disease, or insect or weed pests. As Mark said “...*this is our food, the food we eat, you know, so it's...I hate to spray them. I hate to do that stuff.*” There was a strong association between cancer and agricultural chemicals, and people were uncomfortable or upset about the amount of

chemicals used in agricultural production today. Interestingly, there was a belief that while it is best if local food is grown organically, traditional foods *have* to be organic in order to actually be traditional. This did not mean that food should be certified organic, but that traditionally no chemical fertilizers or pesticides would have been used to grow crops, so they should not be part of growing traditional foods today. Those who did occasionally spray, mostly out of “desperation”, were targeting insect pests. These people stressed that the use of the chemicals was very deliberate so as to use the least amount of chemical possible.

Raccoons, deer and rabbits were also mentioned for their affinity for corn, especially sweet corn, as well as beans and melons. As Josephine commented, “*So what they (raccoons) do is, they go out there—they must have spotters—and when it’s just right they call in all their relatives and they wipe it out!*” Some talked about shooting the animal, but most put up a fence or maintained an attitude summarized by John’s statement: “*Well, they gotta eat too, you know.*” In all pest management issues, the use of natural or the least lethal means of controlling a problem was emphasized. More than that, however, pests were not talked about in a negative light.

Harvest and yield

On the other hand, the season’s weather was, however, something that all the growers found frustrating. Yields were drastically reduced this year due to heavy rains and flooding. People also reported that wet conditions increased the amount of pests like corn worms, increased disease, and made it difficult to weed, all of which reduced their harvest. Many people, from the most experienced to the least experienced gardener, lost their entire tomato or cabbage crop for instance. More striking, however, was that no one interviewed really knew what kind of yields they had from their crops. The market grower knew what sold the best; one person knew how much they had eaten.

The majority of people tried to figure out some answer for, “What kind of yields do you have from (corn, tomatoes, squash, etc.)” by thinking back to how much they had stored that year, or how much they had eaten. Two women said that they knew their families needed to harvest four or five deer, antelope, or other large mammal to supply enough meat

for their entire family for one year. When asked about what kinds of yields he got from his garden, Steven said, “*I never keep track of that!*” He continued, saying,

I put 40 cobs on [each] braid and I actually think I just got one braid left from two years ago. I take all my corn to the [Tsyunhehkwa] cannery to process it...We looked at the records for the past year and I used 100 quarts of corn—just me, my family. We went through 100 quarts of dry corn in one year! And so, yeah, that’s a lot of corn.

Both Mark and the Tsyunhehkwa staff kept track of their yield a little more closely because they both grow the white corn in order to sell it. Mark stores white corn whole on the cob and said that in his best year he got 90 bushels of cobs. Tsyunhehkwa staff said the average harvest for white corn once dekerneled is 30 bushels an acre. No matter how it was grown—whether a 6-acre field or 10’x10’ garden plot—the white corn is all harvested by hand and the corn dried on the cob, then shelled by hand. The high protein content and nutritional value of the corn (see Pirozzi 1999; LaDuke 2004) makes storage difficult, requiring much thought and planning. Before going into the topic of processing and storing, I would like to talk about seed saving as seed selection often happened before a crop was processed and stored.

Saving Seed

Many people talked about seed saving as something their grandparents did, but which mostly died out with their parent’s generation. Despite this, many of the gardeners interviewed did save seed from certain crops. Tomatoes were saved by several people and potatoes and garlic were commonly saved as well. As Alex said, “...*this garlic has moved with us over the years...I grow four varieties...these are just the four that do best in that area...it’s easy to save, just pick out the biggest cloves from the biggest bulbs and plant those every fall.*” When purchasing seed, heirloom crop varieties were preferred by some of the gardeners so that they could save the seed; others knew which companies they preferred to buy certain seeds from, or who to ask for heirloom seeds within the community. Some talked about how it takes time for a seed to learn the climate, but stressed that seeds are smart and will adapt over time if given the chance, i.e. saved from year to year.

Over the last few years, Ashley has been learning how to save seeds and spoke about tracking down and saving heirloom squash seed:

I'm really excited to get ready. I collected my seeds; they're drying now. I got some Mohawk squash and I was devastated because I put them away too soon and they molded. So, these next squash seeds, they're sitting out as we speak. They're going to get nice and dry. I was kind of hoping that as I traveled, through the winter, I'd pick up different seeds from the different 6 Nations people [different Iroquois nations]. I had two sets of squashes and now I have one, but I'll keep track.

Many also saw Tsyunhehkwa as a resource for heirloom seeds, and they occasionally offer workshops in seed saving which focus on the Three Sisters.

The white corn is a special case when it comes to seed saving because it is the only way to ensure that you have seed for the next year. As one person said, “*It's not like you can just go to the store and buy this,*” in reference to the Oneida white corn. Once dry, white corn seed stores well, and some respondents were able to plant corn they had saved many years ago or which were from their parents' gardens long ago. Seed stores were then built up over the course of a few years. One person used seeds he had stored before he went into the military, which he planted when he returned to Oneida over 20 years later. One five-gallon bucket of cobs was enough to plant one acre of corn, after selecting for desired traits.

The biggest concern in saving the open-pollinated white corn seed was cross-contamination with nearby field corn and other varieties of corn. Preventative measures such as increasing planting distance and planting buffers of native tree species were used. However, all respondents reported some cross-pollination which is dealt with annually though careful selection of seed from cobs which grow true-to-type and by flagging corn with desired traits in the field while it is growing. The edges of the corn field are avoided, also in an attempt to reduce saving corn which has been cross-pollinated. The most detailed accounts of seed selection were given by the manager of Tsyunhehkwa, Steven, and Mark, the manager of a local produce stand where he sells the white corn he grows alongside a variety of fresh produce. In the field, they all look for corn that is tall and standing straight up. They also look for the corn in its husk to be pointed up or out, but not down. These plants are usually marked with a flag or a ribbon tied around it. Once harvested, the more detailed characteristics they look for are: that the corn has only eight rows; the corn seeds have no dents in them; the corn seeds are all white, with no streaking of red or yellow for example; the cob itself is white and not red or another color; and that the cob is almost

entirely filled out with plump kernels. This is a lot of detail and I was impressed at the speed and comfort these growers demonstrated when talking about how they selected seed.

Another method of plant propagation was also used by some of the respondents. Whole fruits or vegetables, or just the seeds, were left in the field at the end of the year to over-winter. In the spring, these seeds germinate in the garden and are transplanted into rows when they are large enough. George, an elderly respondent who learned to garden from his grandparents, used this method extensively.

...my cucumbers, my watermelon, my musk melon, what gets left there, all the seed comes out, I throw my old seeds out there. So, in the spring of the year when I plow it all up...pretty soon you see little plants coming up. I take em'—I know what they are—I go and plant em...I just take them from the garden. I let it go wild, just from the seed that was left. Then I transfer them...

This person also said he had been told he “planted the old way”; meaning like Oneida in New York did and continue to today. Others spoke of their parents, who grew tomatoes that would, “*come up by themselves all the time too, on the edge of the garden.*” Many today reported growing onions, herbs and some flowers this way. So, while this is not necessarily seed saving, it is a way to reproduce plants suitable for your growing environment. It may also be considered a traditional practice, much like hunting, fishing and collecting wild foods and medicines.

Hunting, wild foods and medicines

Several people interviewed have hunted game their entire lives and continue to hunt today. Deer and rabbits were among the most common animals sought, though a few reported hunting small mammals like raccoon, and some occasionally traveled to hunt bear and antelope. A variety of hunting tags (which are always required, and grant the right to harvest an animal) are available to both tribal and non-tribal members, including tags issued to tribal-members for different community feasts. In both interviews and in casual conversation, all hunters said that they while they still hunt on reservation lands, they no longer fish within reservation waters due to pollution or the extirpation of local fish and other aquatic species like oysters and clams. For instance, in regard to how much fish is safe to consumer, Jacky said, “*I think its [one] large fish is one every 30 days for adults. But it's zero for women of child bearing age.*” In response, Anita said, “*Even if it was 'clean,' I*

wouldn't trust it." There was a lot of frustration expressed over this, from hunters and non-hunters alike. For instance, one woman's favorite memory about food was catching frogs with her mom as a child, who would bring them home and cook them up for all the kids. Others remember eating oysters, turtle soup, and trout right from Duck Creek which runs through the middle of the reservation. Even younger people, in their late 20s, recalled fishing on the reservation with their family. Many people still catch and eat fish as part of their diet, they just drove to a stream, river or lake that was off the reservation and not so close to Green Bay, where pollution from paper mills, coal pilings and other industrial activity were the primary reasons cited for the lack of fishing available. Concern over agricultural run-off was also seen as a source of unhealthy waterways and fish, but one which is improving over time.

There was a great diversity of wild foods collected by the people interviewed. Greens, like milkweed (*Asclepias* [L.](#)) and nettles (*Urtica dioica*), berries such as black caps (*Rubus occidentalis*), wild grapes (*Vitis girdiana*), mushrooms like puffballs (Basidiomycota) and morels (*Morchella*), and wild leek (*Allium tricoccum*) were among the most common. Much like with fishing, many people said that is very hard to find berries on the reservation anymore and people traveled to a nearby state park or other areas to collect berries, though they used to be abundant on the reservation. Wild rice (*Zizania palustris*), a traditional food of neighboring Menominee and Ojibwe tribes, was purchased by one of the respondents, who bought or traded white corn and squash for rice from a friend every year.

Medicines are also collected in the woods and fields within the reservation today. The most commonly cited medicines were mullein (*Verbascum thapsus*), plantain (*Plantago cordata* and *Plantago major*), raspberry (*Rubus ideaus*) leaf, and blackberry (*Rubus fruticosus*) leaf. Other medicines included slippery elm (*Ulmus fulva*), wild cherry (*Prunus serotina*) bark, and elderberry (*Sambucus nigra*) flowers. Bergamot (*Monarda fistulosa*) was probably the most commonly cited medicine and everyone called it Number 6. No one was really sure why, but after some discussion, the women's focus group seemed to agree that it was, as one person's aunt said, called Number 6 because it's good for six different illnesses. In general, the elder respondents knew more about these medicines. As a young adult, George used to collect herbs for a local Indian doctor who would travel around the region. As a result, he had a very extensive knowledge in regard to collecting and preparing herbal

medicines. He didn't always remember what they were called; he also seemed to be going back and forth between wanting to use Oneida words and wanting to use English words to explain the medicines to me. Medicines were often collected in larger amounts and the parts needed, whether the leaves, roots, stems, etc, were dried and stored for use later. There were many techniques used by those interviewed to process, store and prepare all of the foods consumed, whether grown in the garden or collected.

Processing, storing and eating

Drying the white corn was presented as a challenge and respondents had devised several methods of storing this high-protein and high moisture-containing crop. Many people store white corn for personal use in burlap bags or older mesh onion bags, or braid the corn whole on the cob, hanging the braids from an eave or inside a shed. These methods are a mix of new and traditional techniques. White corn growers reported that hanging the corn is important to keeping it dry and that the bags help keep mice or birds from sneaking off with some of the crop. John's comments about storing corn show the importance of mindful storage, but also a similar attitude towards pests as we saw in the previous section on pest management:

I had pipes in the eaves in the back [where I would hang my corn] and I couldn't see the South end of it. When it come time to pick that corn off to shell it, blue jays had picked all the corn off the cobs at the end! They snuck around that way and got my corn! They gotta eat too.

Mark stores the corn inside in apple boxes whole on the cob, with large cedar wood chips placed in the boxes to help control moisture. Once the corn is dry enough to take off the cob (shell, or dekernel), he stores the corn in 5-gallon buckets with a new stick of cedar. The cedar is obtained from a friend, who told him the wood was "thirsty" and would take up excess moisture. Tsyunhehkwa staff members have devoted a lot of time and energy to figuring out ways to store large amounts of white corn without it molding and have devised several novel methods to accomplish this task. Their system is discussed in more detail in the *Innovation and synergy* section found in this chapter.

After hand-harvesting, when it comes time to eat the corn, the corn kernels are removed from the cob (shelled) by hand, because mechanical shellers will crack or grind the corn, especially if the corn is a little soft. The shelled corn can be stored like Mark does in

large buckets, or like the majority of people interviewed, in large glass jars free from mice. All the tribal members interviewed knew how to cook the corn and described it as a somewhat long and tedious process. The raw corn is first boiled in either baking soda or hardwood ashes for a few hours in order to remove the hull, or outer covering of the kernel. The corn is then washed several times to remove the hull and then returned to the pot to boil, then dried (on a rack out of the sun or in a dehydrator) for use later.

The Tsyunhehkwa cannery staff allowed me to work with them one day as they processed a large batch of the white corn. We worked for six or seven hours to process and dehydrate two large batches of corn and make one large batch of corn bread, KanΛ ' astohale' (gah-nah-stow-uh), from already milled corn. (They routinely grind the cooked and dried corn into fine flour for use in a mush—a hot cereal with a consistency like oatmeal—and into coarse flour to make KanΛ ' astohale' . The flours keep in a freezer until needed). I agree with what many of the respondents expressed: that processing the white corn is a long, though very rewarding, process! Tsyunhehkwa sells the corn raw, but most people bought bags of the cooked corn (with the hulls removed and then dehydrated), along with already made corn mush, the KanΛ ' astohale' or canned corn soup. Mark was considering selling his white corn after processing it (his brother taught him how) and canned as corn soup because that's what people in the community were requesting; they didn't want to have to process it, i.e. remove the hulls, at home.

Storing and eating other crops

In addition to the white corn, gardeners had techniques for storing, processing and enjoying a variety of other crops as well. Many respondents shared that they grew up storing garden produce in large root cellars, which provided much of their diet in the winter months. In the cellar, beans and cabbages, along with braids of corn, were hung from the rafters and root crops like beets, potatoes and carrots might have been stored in sand in a large container. Today, salsa and other tomato-based sauces, squash, corn, dry beans, green beans, potatoes, carrots, cabbage, greens and fruit jams and jellies were some of the most commonly saved foods. A lot of crops were boiled or par-boiled and frozen, or just frozen. Examples include squash, peppers, leafy greens like kale, and prepared foods like coleslaw and jams. Salsa and

other tomato-based foods were almost always canned at home using a water-bath canner, as were pickles. The majority of people learned how to store foods from their parents when they were growing up, though most said they look for new recipes and techniques from friends and in books. Many interviewees also talked about drying foods, now and in the past, and food dehydrators played a large role in storing food. A few used the Tsunhehkwa community cannery to process large quantities of food, such as a large batch of pickles or apple sauce, stewed apples or apple pie filling. One person reported using a community cannery at The Century Farm, a local farm business and produce stand, to make large batches of jam and jelly to sell at farmers' markets.

Elder interviewees shared several low-energy methods of storing vegetables, beans, grains and meat in addition to the use of root cellars. If a family butchered a pig, it may have been left to hang outside or in an empty corn crib in the winter and meat taken from it with a saw as needed. Entire bean plants would be pulled and stacked outside, with the root still attached, in a circular pattern around a small stake or pole. The beans were stacked around the pole carefully to make sure they overlapped in such a way that would allow air flow into the pile. The entire stacks were then covered with a table cloth or canvas and would be kept outside all winter. When beans were needed, a portion of the large stack of bean plants were brought inside to warm up and then would be thrashed in a large container and shelled. Food was stored outside in other ways too; for instance, in pits. George gave the following account of storing potatoes:

After all the potatoes we'd put in the root cellar, we'd have some left over. We dug a hole out in the field where we'd planted. You'd put a little straw or hay in the bottom and then put your potatoes in there, put hay back on top and cover it up with dirt. Then in the spring of the year, you'd open it up; it was just like fresh potatoes. That would survive us for the whole time until we could plant.

These low-energy methods did not appear to be in common use today, but provide insight into the depth and kind of knowledge that is still present within the reservation community. Men and women are both involved in processing and storing corn and other foods, but the role of women seemed to hold special significance.

The role of women in storing and cooking food

While many of the women interviewed either split all of the responsibilities of growing, storing, and cooking food, some expressed that their primary role was to process, store and distribute the food. One woman shared that, *“You need to realize as a woman it’s your responsibility to look at all the food you have stored and decide how much to give out at a meeting, or at a family function or whatever, because you can’t deplete all of your supplies for one event.”* Many of the women interviewed learned to cook from their grandmothers, mothers, aunts and/or sisters. The skills of storing food and cooking from scratch are learned over time and are generally passed from woman to woman. It is still seen as the role of the matriarch to have at least one special family food that she cooks and hands down to her children who are in the kitchen working and learning alongside her. This experiential knowledge exemplifies how both knowledge and skills are gained and used throughout the entire food system, including growing, saving seed, storing food in addition to cooking.

Accumulation and movement of knowledge and skills

Participants gained their knowledge and skills related to gardening in a variety of ways. All of the gardeners or market-growers interviewed currently live on or near the Oneida reservation. The majority of those interviewed grew up in the Oneida reservation area and were raised on small plots of land, either on small farms and or in town with large family gardens. Others were city dwellers but in some cases, one or both of their parents would keep a small garden. To begin this section on the accumulation and movement of knowledge, the following accounts detail how each participant initially learned, or at least experienced, the art of gardening (Table 3 and Table 4).

Table 3. Summaries of how and when interview participants first learned to garden.

Name and age	Where s/he first learned to garden
Mark 58	He grew up on the reservation and learned some from his parents who would plant at least a few rows of white corn every year. He also learned by watching what other people in the area were doing. He tried to join Future Farmers of America (FFA) at the high school but wasn't allowed to because his family did not own farmland.
Steven 55	He grew up on the reservation gardening and farming with his family on 14 acres. They raised crops like corn, oats and hay to feed their animals and occasionally grew a few acres of vegetables, like cucumbers or beans, to sell to a local cannery. He worked in the large garden along with his siblings, parents and grandparents.
George 88	He also grew up on the reservation and gardened and farmed with his family. He was taught primarily by his grandparents who, as he says, “<i>did everything the old way.</i>” They raised animals and the crops to feed them and did the majority of their planting and harvesting work by hand.
Beth 63	She grew up on the reservation and was raised on a large dairy farm. One of the oldest children, she worked along side her father as a child and says it was rare at that time for women to work in the field. Her family also had a large garden where she worked with her mother and siblings.
Charles 69	He grew up near the reservation and would help on his family's dairy farm. A farm accident in his mid-30s caused him to quit farming and find a sales job. His family did not have a garden growing up and he misses being able to use larger equipment, like harvesters, when growing vegetables.
Alex 42	He is from a large city but everyone in his neighborhood had gardens. Though his family had a garden, he spent a lot of his time as a kid following around an elderly neighbor who was, “ <i>organic before organic was even a thing.</i> ” He also managed a 10-acre vegetable farm for two years while in college.
Jean 43	She is also from a large city but her mother maintained a small garden and planted a few fruit trees in their yard. She was raised cooking, storing and eating a lot of fresh vegetables.
Joey 49	<i>“I learned from my grandfather when I was a little guy and he used to always grow the white corn at his house, and he had a farm with animals. My parents too—when I was a kid, I used to have to go hoe 3 rows of corn before I could go play football with my friends.”</i>

Table 4. Summaries of how and when focus group participants first learned to garden.

Name and age	Where s/he first learned to garden
Josephine 78	She grew up on the reservation and her family had a working farm and a large garden where she and her siblings all worked with their parents. She learned how to plant corn from her father who grew 15 acres of field corn. She would walk the fields and plant by hand, or fill-in spaces where corn had not come up.
Marie 74	She grew up on the reservation and it is not clear whether her family owned any land. Regardless, she helped her parents in their large garden and some of her fondest memories are of collecting wild foods with her mother.
John 88	He grew up on the reservation and his family had a large farm and garden. They kept a variety of animals and grew feed crops, as well as a few vegetable fields, like beets which were raised on contract with a local cannery. His family seemed to be well-known for growing the white corn.
Samantha 50's	It was not clear if she grew up gardening or farming but today actively participates in workshops and community events around food and food systems. She has a large interest in nutrition and health.
Ashley 40s	She was raised in a large city and did not begin to garden until she was an adult and realized that, “Indians knew how to do stuff.” Gardening was one way she could actively learn about her heritage. She seeks out information from friends, family and attends workshops in the area and when visiting other tribal Nations.
Anita 40s	She was raised in a large city, in a large family and did not have a garden. Her interest in food stems from cooking large, one-pot meals for her family growing up. She says she has learned much of what she knows by working at the Tsunhehkwah cannery and by attending workshops in the community.
Jacky 30s	She was raised on the reservation and grew up gardening with her siblings, parents and extended family. Some of her favorite childhood memories are of cooking with her mother, aunt and grandmothers. In her 20's she learned that she prefers to “put up” food from the family's garden rather than grow it.

The knowledge and skills participants have accumulated over time form the basis for how they gardened or farmed today. These experiences also allowed people to develop their interests and passions—what it is about gardening or food that keeps them coming back to gardening. Many of the older gardeners spoke about the necessity of growing your own food during and after the 1930s depression era. Some felt that this mindset carried over for many generations, but as many gardeners in their 30s, 40s and 50s shared, they learned to garden because, depression or no depression, their family was poor. However, these gardeners still enjoy gardening today and employ a wide variety of resources as they continue to learn or experience new problems.

Observational knowledge-

“There’s no right or wrong way, this is just how I do it.”

Many respondents were raised gardening or for some working on the family’s small farm or picking in local orchards or large vegetable fields owned by a nearby cannery. Despite this however, everyone spoke of “trial and error” as the main way they continue to learn. *“That’s what they told us to do way back when, and it’s worked. So a lot of this is trial and error and if it works we do it again and if it doesn’t work we try something else.”* Steven spoke of using fish emulsion on his white corn and comparing it to corn that he had planted with fish (suckers) that he had caught. He didn’t have enough fish to do the whole field, but he was able to observe that while all the corn grew well, the corn planted with the fish was one to two feet taller than the other corn watered with fish emulsion. This confirmed for him that using the whole fish had a positive effect on the crop, but that the fish emulsion also worked well.

Others used observation of the local plant community, a type of garden-level ecology, to figure out what types of soils they may have in their garden:

...some of my weeds are wetland plants. They’re blue vervain (Verbena hastata) and narrow-leaf goldenrod (Solidago graminifolia). There’s a sedge, porcupine sedge (Carex hystercinia), that I kind of just let be there and those are telling me it’s a wetland. I’ve got a big silver maple in my yard, a floodplain tree.

As I mentioned before, the presence of certain weeds let some gardeners know what types of nutrients were in the soil and what plants might do best in that area. Animal pests were

identified by how the pest had eaten—“...*the rabbits, they pull the leaves off, they don't eat the leaves, they eat the stems...*”—or, by looking for their tracks. One person would use the tracks to figure out when the animal was in the field; for instance, if the animal had walked over his tracks from the afternoon or from the morning. Building on their life experience and observation, these gardeners and food processors still have questions and they turn to a variety of other sources to find answers.

Where to go with questions

Many gardeners also sought out workshops on new topics and consulted with family and friends on different aspects of growing. People also relied heavily on trusted gardening books, along with the internet to a lesser extent. One grower didn't really use books at all, preferring to ask his family; another said he pretty much only turned to gardening books for information, though he said he had one friend he may go to with questions. In looking at the bigger picture, of reviving traditional practices and culture, many in the community would go on trips to visit with Oneida and other Iroquois Nations still living in their homelands in New York and Canada. These Nations provide heirlooms seeds, such as Ashley's Mohawk squash described earlier, as well as a vast array of knowledge. The importance of this relationship, this tie to their homeland, cannot be overstated as the Oneida of Wisconsin can rely on their relations in New York and Canada for both knowledge and seeds, as they bring (back) traditional practices and crops to where they live now.

As knowledge from New York and knowledge kept within Oneida accumulates, it might be formally shared through tribally-sponsored workshops. Over the years, many gardeners attended these workshops to learn something new or to improve their knowledge and skills in a particular area. As Anita said, “*All I know, I learned from Tsyunhehkwa because I didn't have no background in gardening.*” Anita is now in her third year of gardening. Steven, who has been gardening his whole life, also talked about one workshop in particular that he attended over 20 years ago, where an elder woman, a Cornelius named Melissa Old, showed him and a good-sized group how to plant in the old way, with mounds, and the fish, and the Three Sisters planted together. In this sense, Steven learned that while his parents were good gardeners and farmers, there were other skills and techniques that he

had yet to learn. Many people felt that it was very rewarding to reflect on how they did things in the past while continuing to learn new things.

Learning why what you did was good

Joey reported that he at one time used heat to dry white corn, but then in thinking back to how his grandparents would dry corn, realized that heat may actually cause the seed to mold or become sterile. As a result, he recreated a system similar to the one his grandparents had used, drying the corn in large racks which allowed natural air flow. *“We used to heat it, force dry the corn with heat, and then I found out that makes it sterile. So if I ever had any problems, say I lost all my seed stock, where am I going to get more? You can’t just run to [any] store and buy this white corn seed.”* This brings up another theme: that as Oneida gardeners learned more about gardening in workshops or even more formally in school, they appreciated learning why what they were doing now, or in some cases, had been doing their whole lives, was a good practice. Several stories people shared revealed a kind of “aha” moment for them where they learned more about a practice or a food that they, and/or the Oneida, have been using for as long as they can remember. Steven shared that,

...throughout the time we were burning wood. I didn’t really understand it or know anything about it, or ask why. That was just what we did. So I guess somebody studied it or whatever and said, ‘Oh boy! That’s really good for the ground.’ And our people have been doing that since the beginning of time!

Another person, George, loves the wild green milkweed (*Asclepias* [L.](#)); time and again he said in spite of all the wonderful things from his garden that this was his favorite food. He said that one day he was watching television and a program came on that talked about this favorite plant; *“I started listening and they said that whenever they can get a human being to eat milkweed, you’d have a cure for cancer. And the Oneidas, we been eating that—well, not no more—but I still pick.”*

Both Joey and Steven also talked in-depth about how they used fish emulsion on their crops. In both cases, they mentioned how this idea came from the Oneida’s traditional practice of burying fish within each corn mound. As Joey said about the use of fish emulsion,

So it's a little different, but we're still using the fish. I'm still using the fish emulsion. It's not a whole fish anymore but it's still the same properties, it's giving the same nutrients and everything, so I'm kind of like learning why I was doing this. So it's pretty neat; I really enjoy that.

Both Randy and Joey initially tried using the fish emulsion because it stemmed from the traditional Oneida practice; they found it convenient and effective so they continued using it.

Innovation and synergy

The use of fish emulsion is one example of what I call the innovation and synergy of old and new practices. In this section I explore more places where traditional and modern practices and crops differ and where they converge. For instance, Mark and Charles both have arrangements to grow and sell produce through a friend who has a larger produce farm; and they both grew a high-value, high-demand crop: corn. What is interesting is that Mark grew white corn and Charles sweet corn. Mark contracted his friend to grow one acre for him, and he himself oversees the crop during planting and then is responsible for harvesting, processing, storing and selling the corn. Charles was one of several buyers from the produce farm where they plant around 240 acres of sweet corn a season. This sweet corn was also harvested by hand, usually by high school students, before being sold at a local market later that day or shipped to a wholesaler, and some is also picked up by Charles to sell. What is striking about these two relationships and these two varieties of corn is the level of care that white corn requires, particularly in processing and storing, compared to the sweet corn. White corn is meant to last an entire year, to be food through the winter, while sweet corn is meant to be eaten fresh immediately. The two crops move at entirely different time scales throughout the year and are grown on the landscape to vastly different extents.

In looking at growing practices used by the other gardeners interviewed, one non-tribal member said about the Three Sisters: *"I know the natives plant them all together"*. However, in the preceding section on planting and caring for crops, I described that everyone, tribal members and non-tribal members alike planted their corn in rows, which is not the traditional practice per se. The Three Sisters were still grown together in the same garden (in all cases but one); however they were only grown in the traditional mounding system at educational or demonstration sites. What was interesting is that most gardeners

had experimented with the mound planting style just to try it; or, further, to connect with their heritage. As Josephine shared about her planting style,

Well, I've always row cropped, but I've tried the planting of the hills with the corn, the beans and the squash. That to me is a very good way, for the nutrition of the plants and for your own nutrition. That's a good way, that's a good thing to do, but it's more labor intensive. So, I would probably rather row crop my corn and put my beans...in a separate place with poles up and put the squash in an area that won't drown everything out because their vines are so extensive...

When talking about planting the Three Sisters, what was emphasized by tribal employees was that a person could plant the Sisters together any way that they like, that worked for them in their area. In his extensive review of corn cultivation among early Iroquois nations, Parker (1910) described how fields were cleared by girdling any trees and then burning the dead trees along with any weeds or small shrubs. The land was then worked by hand with plows made from antlers and wood. This leads one to wonder if the traditional mound system allowed more crops to be planted in a smaller area, meaning less area that would need to be tilled by hand. Today, growers have access to a variety of cultivators to clear land and this likely influences how they plant, and the growers in the study were still growing the three crops together, often using heirloom varieties of at least one of the Three Sisters. The squash with its big leaves was still used as a living mulch for the corn, or another crop like beans if they were supported on poles, or even as a barrier around the edge of the entire garden.

These practices demonstrate that the Three Sisters still play a large role in gardening, but that the traditional planting style (coming together from the womb of Sky Woman's daughter) had changed over time as gardeners have more space and less time. The importance of the crops and understanding their relationship with each other and to the Oneida remains an active part of the gardening conversation. Other examples of synergy and innovation that maintain the integrity of a tradition while allowing for new adaptations are the traditional technique of planting by the moon while also using manure, as well as innovative methods for drying white corn.

In *Oneida Lives* (Lewis 2005)—a collection of interviews conducted in Oneida from 1940 to 1942 through the WPA Federal Writer's Project—one of the interviewees details a scene where he, an Oneida man, and his neighbor, a white man, are talking about their potato

fields. The white man was teasing the Oneida man because his field didn't have many potato vines growing in it compared to his. When it came time to harvest, the Oneida man actually had more potatoes and they were larger and rounder than his neighbor's. The white man wondered if the Oneida man simply had better ground, but then the Oneida man started asking about when his neighbor had planted. The Oneida man had planted after the full moon which is said to promote underground growth, while the white man had planted during the new moon period, a time when crops with above ground fruits should be planted. In this story, the Oneida man had a larger yield and was playfully boasting to his neighbor about the value of planting by the moon, which is something, "he [had] heard that Oneidas have always kept..." (121).

During one of the focus groups, John, an elder, described a similar story, but he used manure in his field and his and his cousin's father told him that his yield would be less because he hadn't planted by the moon.

Her dad, he used to say, 'No, you have to plant according to the moon.' Her dad says, 'You're not planting on the moon—you're putting manure on.' Well, if you don't put manure on, you don't get nothing! So anyhow, the time comes when the potatoes are starting to get ripe and the vines are drying up, my dad comes over, he said, 'What you got under those vines? Probably just dirt!' I took a little 10-quart pail that I had and pulled up one vine. You should have seen the potatoes coming out of there! Filled that 10-quart pail with one bush. He says, 'I'm going home to check [mine]', but he didn't put fertilizer on!

When I asked the group of elders if most people at that time stopped planting by the moon and relied on manure instead, everyone unanimously said, *No*, that most Oneida started doing both—incorporating manure into their field and still planting by the moon. This adoption of manure in planting is a wonderful example of how new practices can be used to compliment older practices. Though some did prefer to rely just on the manure, like John, this is an example of how innovation stems from the synergy of two distinct practices.

Tsyunhehkwa methods for storing white corn

Another example of innovation is the method of storing white corn that staff of Tsyunhehkwa devised to store their 6-acres worth of white corn once harvested. When I arrived at the Tsyunhehkwa farm site for the first time on May 16, 2009 I was lucky enough to be there on the day they were planting the white corn. I helped load up their 2-row planter and watched as the large tractor and its driver made their way cautiously into the field. They planted three of the six acres that day, but what all the staff started talking about was how they were going to store the corn that year once it was harvested. That year, in 2009, they had a large harvest which, while it was drying down, they realized was infested with a poisonous mycotoxin (the toxin results from a mold or fungus that lives in the soil). This discovery was absolutely tragic, as the staff had to throw away, not even compost, half of the crop they and their community had harvested by hand. So that winter Joey decided, after visiting a large white corn grower in an Oneida community in Canada, to develop a new way for Tsyunhehkwa to dry their corn; he envisioned a large wagon like he had seen the Canada white corn grower use.

Every year after harvesting, two-hundred braids of corn made from forty or so of the nicest cobs each, are hung to dry in one of the farm's buildings. The rest is laid out flat in racks in their greenhouse, where space is always an issue. While the mold was not necessarily a result of how the corn was dried, it motivated the staff and Joey in particular, to come up with another system for drying corn. Working with a friend who is a welder and engineer, they came up with a design that would use an old gravity box wagon that is typically used by conventional, large-scale corn growers to store their shelled field corn right from the field (Figure 5). They would be storing white corn in the wagon while it was still on the cob, before it had dried enough to be shelled and stored. The biggest issue with storing the white corn is that it naturally has more moisture than the typically grown field corn. To modify the wagon to solve this problem, they welded a rack in the bottom of the wagon to act as a false floor and keep the corn cobs from stacking too densely on top of each other. Then, they took a blower (large fan) off an un-used corn crib nearby and attached it to the bottom of the wagon, where the corn would normally flow out and into a grain bin or elevator. The wagon was successfully built and held a large enough quantity of corn to allow

for the corn stored in the greenhouse to have more room to air dry. So now Tsyunhehkwa dries the corn in three unique ways, ranging from the traditional braids, to the drying racks popularly used up to the 60s and 70s, to this most recent innovation, the modification of a conventional corn grower's storage wagon.



Figure 5. Wagon developed by Tsyunhehkwa staff in 2010 to store white corn (Pictures taken and compiled by Perry Andersen, corn dryer co-engineer 2010).

What this story demonstrates is the innovation and synergy—and experimentation—of two, not separate but distinct, sets of knowledge: one of the qualities of white corn and its traditional means of storage and the other an understanding of the tools and equipment used by conventional corn growers. The knowledge of each system is used to develop this new technique, but I would argue that this new method is successful because of the thorough understanding of the qualities of the white corn. This is knowledge that people expressed is

not very widely known today; it remains, for many, a sort of lost knowledge. Other traditional knowledge and skills as they relate to food production have also been lost, but as I describe in the next section, are slowly being rediscovered by members of the Oneida community.

Knowledge lost and regained

“My mother, my grandmother and perhaps even my great-grandmother did not pay much attention to clans because the clan was discouraged in the boarding schools and in the Christian churches. So our family has kind of studied it and they belong to the Turtle Clan.”

The generation now in their 70’s and older were said to be the first to return to the Oneida homelands in New York and Canada in order to learn about traditional Oneida practices so they could be brought back and revived among Oneida in Wisconsin. A sort of awakening occurred in Oneida during the 70’s, and it seemed agreed upon that the group of people working in the 70’s to bring the Longhouse religion back to Oneida was also the group that started Iroquois Farms and a community cannery so people could store foods for themselves. This farm later became the Oneida Nation Farm and the cannery a part of Tsunhehkwa. Over time, the Oneida Orchard and Tsunhehkwa developed and branched into programs and enterprises under the guidance and support of the Oneida tribal government and are now collected under the OCIFS umbrella today along with the Nation Farm. In looking back to the beginning of these programs, Iroquois Farms was created as something new, something that tribal members were doing, that was somehow different from the dominant agriculture common in the area.

Interviewees in their 70s, 80s, and in some cases their 50s and 60s, all spoke of doing larger-scale farm work by hand, planting oats or corn and pitching hay for example, and also doing work with horses and, later on, small tractors. The majority of those interviewed felt that the values and skills of how to plant, hunt, and provide for your family had “always been around”, but for tribal members, the Oneida cultural teachings and ceremonies were missing. As Jean said,

Our whole culture was built on being able to grow our own food and sustain ourselves—and have a huge land base to do that. And that part of our history is not repeated enough for people to understand why it’s really important that we keep growing the food that we grow and how important it is for us to be able to sustain ourselves with that food.

Slowly, these ceremonies and more traditional values are being nurtured and this is deepening many Oneida gardeners understanding of their relationship with and respect of the natural world, and as several people expressed, *“their responsibilities as an Indian person”*. This process is also happening for people who are just now in the last few years learning some of the skills of food production. Being an “urban Indian”, Ashley said, *“my desire to learn these things, started with wanting to learn how to be Indian, it wasn’t a survival mechanism or anything because I was coming from the city.”* Ashley’s experience in learning how to prepare corn soup reveals more insight into how and why some people are trying to bring back traditional knowledge and skills:

We went to ceremony last spring and the way we make our corn soup, here a lot of people make it with, they clean the stuff with...baking soda. They use baking soda to get the hulls off and we’re supposed to use hard wood ash. There’s a chemical reaction that happens when you do that that enhances your corn. So, I have tried this and I can’t do it, so I gave up after multiple times of trying this. And so I know how to do it with the baking soda. And they never talk in English in ceremonies, very rarely will you hear them talk in English, but last spring, our Wolf Clan chief stands up and goes, ‘We’re not supposed to be using that baking soda, I heard you’ve been using that baking soda.’ And I was like, ‘Shut up!’ (laughs) Then I had to try again, because there’s a reason why we do the things we do. And baking soda’s not right, [I should] quit making our soup like that. So I come home and I went to see the guy who I know knows how to do that. And I said, ‘I’ve tried multiple times and I can’t get it.’ And he says, ‘You have to get it [the ashes] so it’s like so thick in your soup, and you have to stir it so it doesn’t burn. Yeah, and so I was like, the first time I did it I was really proud and you get all kinds of compliments if you know how to make it. People know if you know how to make corn soup, but I was just really taxed because I was like, ‘Dang! Where are you going to find hardwood ash?’ And so, again, if I don’t have my maple syrup camp, I don’t have ash.

At the community level, one practice that is returning with the rebuilding of the Longhouse is the Seed Dance Ceremony, where everyone attending brings their seeds which are put into a pool. The men play against the women and the winning side wins the seeds which are then divided among everyone. In this way, the community’s informal “seed bank” is diversified, and families were encouraged to bring what they were best at growing, whether squash, corn, or tomatoes, for example. In 2007, Tsyunhehkwa initiated a program through a grant which took ten people through a season of growing a Three Sisters garden (Peterson 2005). In return, the people were asked to save their seeds and bring some back to

Tsyunhehkwa so that they could mix the participants' seeds with their own and "refresh" the seed bank, much like in the Seed Dance Ceremony. Though much knowledge in relation to seed saving has been lost, seed saving is coming back slowly.

The white corn is the most commonly saved crop and there remains a strong and growing body of knowledge related to growing, cooking and saving seed for this food which is so fundamental to Oneida culture. People are now looking to save more squash and bean seeds and there are a few well-known bean and squash growers who have this knowledge and are willing to share. It may go without saying that regaining knowledge, particularly a living, tacit knowledge, is a journey down a long road. For instance, not everyone who saved white corn was in agreement with different aspects of saving the seed. There were differences among respondents over how to distinguish between male and female cobs, or how pollination happens. Some referred to red cobs as female cobs, while others said this showed cross-pollination. These people referred to cobs with rounded ends as female corn, or "mother corn". After protecting the crop from cross-pollination, the consensus among white corn growers was to "let mother nature take care of that" and that the male/female relationship made the corn stronger, and was essential to its existence. So, while the exact process of pollination may not be well-understood, the corn was trusted to reproduce itself.

Through the telling of some gardening "mishaps" a few interviewees expressed frustration at the loss of knowledge in relation to seed saving and growing crops. One man shared that he has over the years provided gardening advice, as well as some of his family's bean seeds, with members of the community. Several times the people, or in some cases programs, growing the crops—for example, the beans or potatoes and cabbages—either didn't harvest them after planting, or they did not keep any bean seed to plant again next year. He had a hard time relating to why someone wouldn't know to save seed for the next year, or worse, not harvest something they planted. Another woman spoke of a friend coming to her with a problem with her corn—the woman had corn smut (*Ustilago maydis*), a common mold found on corn throughout the world. The woman, "*totally freaked and she cut all the corn down.*"

In both cases, the person could not believe that someone had made such an error, but they at the same stressed that he or she was there as a resource for people when they had

questions. In this case, they are each willing to share what they know, but they are also going to get frustrated at times! What their frustration may stem from ultimately, is that what they consider to be fairly normal in their lives, gardening, is a foreign concept to their neighbors, family, and friends. One person, an experienced gardener who had been given bean seed but did not save it, didn't realize he needed to in order to grow it again. This was sort of annoying to him because he really liked the beans so he wanted to be able to continue growing them and couldn't get the seed. Little by little people are learning, but what may ultimately be missing is a critical mass of people that can support each other in gardening in a traditional way, with seed saving or other methods of soil fertility for example.

Elders and traditionalists tended to share more knowledge about saving seed in particular and were often asked for their knowledge on seed saving by others in the community. This is true of other practices such as seed soaks. These were commonly talked about though few people regularly used them anymore. Despite this, there is a strong body of knowledge and appreciation around their use. As with seeds, each family might have had their own seed soak, based on what grew around their property or what pests they had. In his pivotal work on agriculture and the Iroquois, Parker (1910) wrote extensively about the use of seed soaks, primarily as a deterrent for crows and other birds who might pluck corn seed from the ground.

The leaves of the mayapple (*Podophyllum peltatum*) are one example of seed soaks discussed, and to some extent still in use, today:

...my great uncle, what he does before he'd plant, he'd soak his seeds in the mayapple leaf. Right near the time when you're beginning to plant in the May of the year, after the new moon, they had a little woods between us and there were all kinds of mayapples in there...during that time they're low to the ground...he'd pick those leaves from that, he'd boil it up, let it cool off, then he'd put his seeds in there and let it soak for like a day. Then he would plant. That's like a pesticide, that's what that is. And it seems to work.

Other seed soaks were made from bitterroot (*Acorus calamus*), or white pine (*Pinus strobus*) needles and were prepared as described above. Tsyunhehkwa also has an extensive worksheet on the use of seed soaks which is available at their workshops. Given the loss of knowledge that has occurred over the 200 plus years since their relocation from New York

and the unique circumstances in which many of the gardeners interviewed learned their skills, there is no clear model for how to teach the next generation to garden—or to farm.

Teaching the next generation

It seems that the generations in their 50's and older were, for the majority living on the reservation, raised with growing gardens as a necessity (i.e. in order to eat) and so they have the skills needed to plant, care for and harvest crops. However, this group may have been among the few who had stable access to land during the aftermath of allocation policies which divided the reservation into small parcels. On these allotments, tribal and non-tribal families worked the land raising agricultural crops such as corn, oats, hay, produce crops such as beans, beets and cucumbers, and small dairy and meat herds for income in addition to their gardens (Lewis 2005). Further, as I talked about earlier, even for those with land and farms with family gardens, the cultural and ceremonial aspects of the foods were missing, as were many heirloom plant varieties. In short, western agriculture and crops dominated the landscape. It is also important to note that it was by and large illegal to practice any American Indian religion until the passing of the American Indian Religious Freedom Act in 1978 (Canby 1998).

The results of these many changes were experienced by respondents differently. One person who was raised on the reservation and had grown the white corn his whole life, shared that he was not really sure what the history of white corn was; he said that the Oneida Museum does a great job in explaining it. Another life-long gardener, and now Faith Keeper, said that it wasn't until he traveled to another reservation as a teenager and heard people his age talking about their tribes' stories and using their language that he even realized that this was missing from his life as an Oneida. Two respondents talked about the 70's and the revival of Indian culture that occurred throughout the United States. Yet as we see tribal programs growing and the emphasis that many tribal members interviewed placed on understanding traditional beliefs and practices, the next generation of gardeners will undoubtedly have more and more opportunities to learn Oneida practices through their work in a garden.

Several tribal programs teach people, both young and old, how to grow food and others how to cook healthy foods. One program, a summer-long workshop series sponsored

by OCIFS, was intended as a way to create, or “grow”, farmers by teaching basic skills in vegetable production. This program may not be growing farmers, but respondents familiar with the program felt the program was successful in giving people the skills to have a successful garden. Tsyunhehkwa offers workshops on Three Sisters gardening, identifying herbs, growing fruits and berries at their farm and gives group and one-on-one instruction in canning and storing foods at their cannery. Demonstrations and small workshops on things like starting seeds and composting are offered at the Farmers’ Market throughout the summer and are family-friendly.

Knowing how to store food and cook food was another challenge, or skill set, that respondents felt the younger generation was not exposed to, and not learning. There are reasons for this, as one woman listed, *“I don’t have time to boil a pot of potatoes. Or, I don’t know how to cook. I don’t have a pot to put it in.”* The focus groups emphasized that when they were younger, even cheap foods, like McDonald’s were too expensive for their family. Instead, they would tend to cook large amounts of “one pot” meals like chili. Another woman talked about her mother making homemade fruit leathers for them as kids; *“the fruit roll-ups they have today, we had the super poor-ass roll ups!”* While funny, what’s important about her comment is that as more and more families rely on processed foods and eating out, for whatever reasons, fewer people know how to cook and store foods; and it is now cheaper to buy unhealthy processed foods than it is to cook healthy meals at home—or make *“poor-ass roll ups”*, i.e. all-natural, low-sugar fruit leather. The Oneida tribal program, Living in Balance, has been successful, but many worried that while programs are useful in getting parents and kids interested in cooking healthy foods together, they cannot replace the support and social interaction that comes from learning at home with your family every day.

In reflecting on the responses of those interviewed, I realized that many of the younger people, between eighteen and thirty, who I interacted with but did not interview were *frustrated*. Frustrated that they couldn’t fish on the reservation or that their parents didn’t keep a garden anymore, if they ever had; they were more upset that their generation didn’t really seem to care about these things or food in general. One man in his mid-20s was upset over the fact that many people his age took for granted what it meant to go without something. This generation—my generation—also learned a lot of our eating habits in

school, from free lunch to the curriculum that was taught. Today, the Oneida community is beginning to recognize this and is including more information and activities about healthy food and traditional food in their curriculum.

The tribal elementary and middle school—the Turtle School—has a large vegetable and herb garden and students participate in a gardening opening ceremony led by staff from the Cultural Heritage program every spring. Classes on vermi-composting (using worms to compost food scraps) and starting seeds indoors are also taught in the spring and opportunities to work in the garden are available all summer through a “garden club”. In the fall, students harvest the vegetables and cook a large meal for their family and friends as part of their class work. This meal includes making traditional corn bread from white corn grown in the community. These programs are funded by the tribal government and represent the priorities of the community to teach the youth about Oneida culture while providing healthy food.

However, respondents did express some frustration over the overall quality of food served daily and the quantity of programs available for youth to learn gardening and what may be considered traditional skills, like hunting or saving seeds. One woman was frustrated with how culture is viewed within the community programs, saying that “*Culture isn’t about shaking a damn rattle*”. In regard to the schools, this same woman said, “*You want to teach them prophecies, well then you have a responsibility to teach them how to survive when all these horrible things start to happen...I have a problem with people telling prophecy if they don’t give them tools, because these kids feel helpless.*” Another woman expressed aggravation over what she saw as the tribe’s inability to figure out how to include youth in the economy; specifically, that there are not a lot of jobs for them other than working at the fast food restaurants found on the edges of the reservation. One solution to this problem was to let the students grow more food for the nation; “*If you let our kids just grow the food for our Nation they will be prepared to go to any damned college in the world. They would have the fundamentals.*” But, as one could guess, it may not be that simple: skills like gardening and hunting are only now being reintegrated with any sense of Oneida culture, traditional or otherwise.

Marie thought the community as a whole would benefit if more traditional medicines were used, but she worried, “*whether or not they would trust it [medicines] to use it. Think of the generation now, like teenagers and whatever, and even the parents, because it’s like two generations already that it’s not been in use, or three generations even.*” It seems that the longer a practice is not used, the less valid the knowledge, in this case in relation to herbal medicines, becomes. When asked about when most people stopped gardening, Steven responded in a way that reveals the localized context of what food production and livelihoods were like when he was growing up.

I think it was probably like my generation [that stopped gardening], like the people I grew up with, a lot of them went to school, got gooder jobs, they didn’t really have to [garden], cause we were dirt poor [then]. That’s how it was, that’s how the reservation was. There was nothing here in terms of work other than working for farmers and we did that. As kids growing up, we’d work for the farmers in the neighborhood when it came time to bale hay, or just helping out around the barn, just cleaning the barn out. We had one farmer, over south of Seymour that did seasonal...he planted fields of cabbage, fields of cucumber, fields of sweet corn and he’d hire Oneidas and then Mexicans too would come up... When we were little, I was probably no more than ten, I was going over there, working there. Sorting cabbage, planting cabbage, picking cucumbers, and cutting cabbage and stacking sweet corn...But, on top of that we’d take care of our own garden...And we had a big field too, of cucumbers and we would sell it, there used to be a place we would take it right in Oneida—they had a sorting machine...and then they’d take them to the pickle factory in Seymour or Green Bay.

In reflecting on these comments, I am reminded of a conversation I had with a Food Bank coordinator working in Milwaukee who said that volunteers would often get frustrated with some of the people working in the Food Bank sponsored gardens, specifically with Black families that had moved to Milwaukee from the South. The coordinator told me how much of his work there involves healing people so they want to garden again, so they see it as something good for them and not a relegation back to hard days—or slavery—of their own and their families’ pasts. Among Oneida where gardening was once a way of life as an Iroquoian person, it became necessary as a displaced person living in extreme poverty. To pick up gardening again means to deal with both parts of that past. How do you teach the next generation only the good parts? Furthermore, while opportunities to learn about Oneida cultural history are increasing, there are fewer places for young people to actually learn how

to garden, hunt, or fish, where most of the gardeners interviewed grew up doing these things in part as a function of being poor in rural Wisconsin. What is strong and will likely serve as a great resource for solving this and other dilemmas is the worldview, or how an individual or community orients itself with the world, which came through in several salient examples during the study.

Sharing a worldview

Standing in the large garden at Tsyunhehkwa, I commented on the many bright red and yellow tomatoes growing on the large, healthy, green plants. Their grower responded simply, “*Well, thanks, but I don’t take credit for creation*”. Despite the care, attention and detailed strategies people employed to grow their garden crops, all of those interviewed also expressed that despite their work, a large part of their success belonged to nature, to God, or to the Creator. This sentiment was shared across traditional Oneida, Christian Oneida and non-tribal members alike. One woman spoke of her joy in watching onions grow from seed,

Onions, oh my gosh, I never thought I could grow onions. It’s just so rewarding to see them come up...normally, you see a shoot come up, but an onion comes up as a hoop. And then it brings the seed up later...and you keep cutting them...this year everything was under water but last year our onions were a pound each. To me, that’s an absolute miracle.”

Another woman who talked about seeds as being really smart also demonstrates this worldview which pays heed to the dynamic ability of life, whether animal or vegetal, to exist. If we view this “I don’t take credit for creation” sentiment in contrast with the “command and control” paradigm dominating agricultural production today, a worldview emerges which stands wholly distinct. These gardeners work within a paradigm that stresses cooperation with nature, or one which works within the “confines” of nature which others may seek to control; and they celebrate the role of the “other”, some divine and/or natural force, by giving it credit.

The humility and thankfulness which people approached their relationship with food, growing and eating, was also very distinct. As Steven said about traditional Oneida beliefs,

...you can’t bless anything the creator made. Man can’t do that. Everything that’s been created, you can’t improve on that, or bless it so to speak. We can’t do that because the Creator already did that when he created it...We always gave thanks after we ate...”Yaow (thanks) it’s three-pronged: it goes to the spirit of that food, to the spirit of that cook...and it also goes to the Creator.

Another person, with a tinge of humor, was thankful in a different way, by planning for the future, “*Well, I save the [corn] seed so this way I can plant the next year again. I save about at least a pail every year. At least I got something you know! Other than that, I won’t have nothing at all!*” The worldview here is cyclical and somewhat conservative, doing something this year so as to have something the next which demonstrates a certain level of humility and respect. Others also revealed a similar sentiment, revealing a sense of responsibility and also modesty in that change can happen and it’s best to be prepared, or have nothing at all. This influenced what people grew, for example, food for the winter, or how much they would need to save if they wanted to have something to share at another event or ceremony in the future.

When asked if there are any Oneida stories or teachings about saving seed or on how to plant most people said that, no there are not. What some would go on to say, however, is that their teachings may not tell you how to plant, but instead tell you that you *should* plant—and be thankful for that opportunity. Among all those interviewed, different foods marked the passing of seasons and were welcome signs of the time of the year. Observance of time and marking the seasons through ceremony is a strong theme in Oneida cosmology and ceremonies are decided by the position of the sun and moon, but also by the readiness of a food, from maple syrup to the corn, blackberries or strawberries. Faith Keepers decide the day of a given ceremony based on information they observe about the readiness of a given food. In speaking about the summer green corn ceremony, one person said, “*The corn tells us when it’s going to be basically!*”

The Oneida cosmology which revolves around giving thanks for healthy foods and healthy people and honoring the things which provide this good health provides much insight into a worldview where the natural world deserves as much credit as anything man-made does. Where I think a distinct Oneida worldview came into focus for me was when talking with a well-known gardener about the genetic modification of seeds, a common practice in conventional agriculture today. He, like many organic gardeners, does not like the use of technology to modify the genes of food plants. What was striking was that his reasoning revolved around an understanding of responsibility: the responsibility of the plant, corn for instance, to provide food for people year after year, and of the people to care for and honor

that plant. In this context, genetically modifying the plant interferes with the plants own autonomy, its ability to provide food and reproduce in order fulfill its responsibility.

Humankind had no right to interfere with the corn's ability to meet its responsibilities; so in this case, the human is being irresponsible. I find this reasoning to be very distinct among gardeners I spoke with in Oneida and several other Oneida gardeners shared this sentiment—that it's important for seeds to be able to be saved—even if they did not articulate a sense of responsibility in the same way this one person did.

All in all, I think this worldview, loosely articulated here, is very valuable to food production which is localized, small scale and trying to promote ecological health and human health at the same time. Dr. Carol Cornelius (1999) wrote eloquently on the Three Sisters and Iroquois cosmology in her detailed book on the role of corn in Iroquois culture and learning.

The Three Sisters is where agriculture and horticulture, and human culture meet. Is it gardening on a large scale or farming with a human face? In any case it is culturally complex, with distinct but interrelated factors, in which the functions of planting, harvesting and eating are more than biological necessities; they are elements of a well-organized sacrament.

As this group continues to garden and share their knowledge and skills, the food system will continue to grow; a shared worldview may provide a dynamic and, as Dr. Cornelius described, well-organized blueprint for how to approach food system development.

A dedicated few

Still, this group of gardeners is collectively a very small percentage of the population living on or near the reservation today. As one woman put it, all the gardeners interviewed in this study might be seen as being in an “*elite group*”, possessing a special knowledge base, skill set and level of commitment.

It's real work, it becomes a lifestyle. Then you really get appreciation for it. Right now, you'd be kind of in an elite group, who have the understanding or knowledge of how to take care of those things [crops]. It's pretty special. If everyone had that knowledge, that would be really awesome because it would change the way we relate to each other.

Seed saving exemplifies this idea of an elite group: there is no critical mass of people to turn to for support in learning to save seed. The same is true for many traditional growing

techniques. It's a lot of looking "*for the guy you know who knows.*" Tribal programs can help facilitate learning, but they also strive to promote gardening and local foods in a way that is acceptable to all members of the diverse community, made of tribal, non-tribal and other ethnic groups. If looking for traditional growing techniques, or an appropriate ceremony or song to have while planting, an individual has to again seek that out through different means, some of which are supported by the tribe, but which are primarily "word of mouth". For all these reasons, it becomes difficult to gain a knowledge base unless someone shows interest, finds a little space to grow on, and commits the time to learning through trial and error; these few form this elite group of gardeners. Still, local food continues to become more and more available and this availability along with the increasing numbers of gardeners is having an undoubtedly positive effect on the community.

Chapter Six

Food system revival in Oneida: Qualities, outcomes and challenges

This chapter presents some of the broader qualities of the food system which may extend to the worldview held by gardeners and community members but which I feel do not relate specifically to knowledge per se. The qualities are instead broad and somewhat more intangible but are important aspects of the local food system nonetheless. I then talk about some of the outcomes that people interviewed felt local food system revival and the promotion of traditional foods can and does already have on the community. I conclude with an overview of some of the challenges to food system revival identified throughout the research. Many of these challenges emerged from interviews and conversations and many were not explicitly stated as challenges. However, when those interviewed explicitly named a challenge, they typically focused on the difficulties in learning about, promoting and sharing traditional beliefs and practices within the community. In these instances, the barriers to food system revival revolve around the loss of knowledge related to traditional skills and ceremonies, but also include the discomfort and unease some community members have towards traditional Oneida cosmology. I conclude with an overview of some of the strategies identified by community members and interviewees to continue the Oneida community on its path towards food system relocalization and food sovereignty.

Qualities of the local food system from production to participation

Responsibility

Responsibility came up in several different ways during interviews, focus groups and participant observation. Some were motivated by a sense of responsibility. As Jacky said, “*I take my responsibility for what I do to the planet very seriously and very literally, and so I guess that’s sort of the backbone of why I do what I do when it comes to food, to local food.*” Responsibility as a motivator could also be more specific, or directly related to an event or time period; for instance two people talked about how when they were kids, they were given the responsibility of taking care of their own tree or a small flock of hens. The sense of ownership that came from the responsibility they had to care for these things was a positive

experience for them. The responsibility involved in caring for plants and animals extended into their adulthood where it began to take on greater meaning. For instance, with the white corn, Joey said, “*You really have to take care of this corn, even off the field. This corn has been in our life since...it goes back to the Creation story, so...long before I was born. It goes back in our history forever.*”

Many people expressed the sentiment of different levels of responsibility. The Three Sisters in particular seemed to carry with them a unique level of responsibility in contrast to other foods. As one woman said,

*I feel like growing local foods is easy, in my opinion. But ensuring that our traditional foods **survive**, that's different, and that's a responsibility that we all share, but it's a very (pauses) if I didn't grow onions next summer that would be alright. But if we didn't grow white corn next summer (pauses) that's a different level of responsibility.*

Here responsibility takes on even greater depth and meaning and has implications for cultural survival and identity as well. Responsibility is a gift that is taken very seriously. When asked what they fertilize their gardens with, many respondents said compost, which was discussed in the previous chapter. However, what was striking to me was that many of the women interviewed also explained compost further, in terms of responsibility: their responsibility to return plants to the earth (and make sure their family does too), as well as the responsibility of the plants to decompose and provide resources for new growth. Jean gave the following description:

Well, instead of putting it in the land fill where it never gets the chance to do its responsibility of feeding the earth. People throw all their scraps away; grocery stores throw all their food away. People throw their food away and then it's lost in the toxic swill over there, but if you compost it then it gets a chance to turn back into the dirt where it is from. It gets to do its full cycle.

In talking about how good you feel when someone honors you, or pays you a compliment, Steven related this to Oneida ceremonies because,

The belief is that that's the same thing spiritually the maple tree experiences. So, it will continue to fulfill its responsibility so that seven generations down the road, the trees are still going to be here and the ceremonies...so it has to do with mutual respect and the relationship, the respectful relationship we have with that. And that's what all the ceremonies are all about.

Here, responsibility extends to the maple tree to provide for people, and people are responsible for honoring the tree for fulfilling its role, its responsibility. This is similar to Joey's comments on how it is irresponsible of people to take away the responsibility of a plant; we were talking about corn. Both of these comments provide insight into the cyclical nature, and a kind of mutualism, that stems from this sense of responsibility. In being responsible, humans and nature become *interdependent*. This interdependence also defined the strong relationships needed to be successful in growing, storing and eating local food which came through during the study.

It's all relational

As with the cyclical understanding of responsibility and in the way knowledge moves through the community, strong relationships played an important role in creating and maintaining the local food system. The importance of relationships was even evident in the way people introduced themselves, with a story or some glimpse of their family or land base. Relationships serve a very functional purpose as people relied on each other to find access to land; for help in the garden or when storing and cooking food; for materials they needed, such as white corn seed; and in the enjoyment of food. Gardening and eating locally was also viewed as a way that people strengthened their relationship with the earth.

The diversity of land-use agreements among respondents was very striking. Many were living and gardening on land near or on the property where they or their spouse grew up. Everyone interviewed owned either land or a house and some had additional land where they gardened or farmed off their property. Two rented land from friends with farm land to grow corn, six gardened at their home but wished for more land (one was actively seeking to buy land) or had additional fields at another family member's house, one rented a community garden plot from the tribe, and others who could no longer garden due to age or the loss of a partner would allow others to use their land for a garden. People renting land or with land-use agreements with a friend or family member felt secure in this agreement. It seems critical then to maintain these relationships in order to have the access to land needed to garden or farm.

Relationships were also important to actually getting things done in the garden, as well as in storing and cooking food. Nearly all of the women participating in the focus groups or interviews gardened with their family and their husbands were key partners in having a successful garden. In the focus group, many of the women said they actually preferred to be responsible for storing and sharing food, with their husband more responsible for growing food. These roles were viewed as equally important in splitting the work. As Jacky said, *“I learned very quickly that [raising vegetables] was not my calling in life; I’m never going to be a farmer. So, I’ve had to figure out what I can do with local food systems that I enjoy.”* Ashley preferred to grow and work with medicinal plants, while her, *“husband on the other hand, can grow absolutely anything.”* Other women worked with their partners equally to grow, store and cook foods. Steven worked with his granddaughter and talked about different projects he and his brother had done, like raising one or two pigs every year at their parent’s house. As Joey said about starting a small farm business, *“...if I had the money, I could actually say like, here: this is what I want, and I have a lot of friends, a lot of resources like that, so I could make things happen.”*

In all cases, people also appreciated that other person who would “push” them when they weren’t feeling motivated to go out in the garden and work, or to come home from their day job and work into the evening making and canning salsa for example. Encouragement and support was maybe even as important as material goods and knowledge, and people enjoyed their time “around food” with their families and friends. When asked what their favorite food memory was, focus group participants all shared a story about cooking with their family, or gardening, hunting or collecting wild foods with their parents. As Anita said, *“I’m trying to keep food in it, but it’s more like always, like she said, the people who were around at the time.”*

Community relationships were functionally important in accessing specific materials and resources. One interviewee has a wood stove and he provides cleaned, hard wood ashes to the Tsyunhehkwa cannery because they need it to boil the corn that they will sell after boiling, hulling, dehydrating and packaging. He started doing this because he heard that they needed a good source for clean ashes; they’ve since started giving him gift certificates to Tsyunhehkwa retail because, *“I don’t know, I guess they want to make sure I keep bringing*

it.” The Tsyunhehkwa farm was also seen as a reliable source for corn husks, for instance if someone needed some for a funeral or to make corn husk dolls. In addition, Tsyunhehkwa supplies ceremonial tobacco to community members in exchange for a small gift to the farm. One person spoke of how they continues to grow tobacco or other ceremonial or medicinal plants at home because he had simply become known as a source for them. This same person felt that it was important for neighbors and friends to be able to trust each other as sources for questions about health issues, instead of always relying on a doctor. Some sought advice from friends and neighbors if a problem came up while growing, or if someone wanted to learn how to prepare a food using traditional practices, as I described in the section on the “accumulation and movement of knowledge and skills.” Relationships help people get things done and these interactions are also valued in and of themselves as something enjoyable as well as useful. Gardening or hunting, collecting wild foods and other subsistence activities outdoors also afforded people the time to develop their relationship with the earth.

Relationships with the earth

When asked why people wanted to start a garden, or continue to garden, most people first mentioned the taste and higher quality of the food. Many people also appreciated the relationship with nature, or with the plants themselves, that gardening provides. Further, some talked about the intersection between their garden and their religion as it relates to the natural world. As Steven describes about Oneida ceremonies, “*It’s all about having this relationship, an intimate relationship with creation, because our very lives depend upon it; so the creator gave us all these different ceremonies to do as a way of giving back, reciprocating and encouraging them to continue to be here.*” In describing her garden and participating in ceremonies, Ashley said,

I like the relationship to the garden. There’s just something in it, even if I’m not the greatest, but watching the corn peak, watching the squash. Remember how excited I was? So excited! And then all our ceremonies, they mean that much more. When you do the bean dance, you think of your beans and you have a relationship...It feels like its living, you appreciate everything more when you do that.

Samantha commented that, “*I really like that consciousness and the oneness that that sacred plant [tobacco] brings into my life, it keeps me centered...I understand that oneness, with*

being connected to the earth and with that plant.” These relationships are at the same time very intimate and openly celebrated. The value of experience people have when gardening is hard to measure, but it helps bring people back to the garden every year. When looking at the farmer’s market and buying food, it is, again, some kind of a relationship that keeps people returning to the market.

Relationships in the market

Farmers’ markets were credited as more than just places to get food, they were places to interact with community members. Respondents felt that OCIFS did a good job in promoting the weekly market as a community event and providing ready-to-eat food, music, places to sit and eat, as well as small workshops and activities. Both of the market growers interviewed said they went to the market in large part for the social interactions they experienced there. These growers weren’t making a lot of money going to market, nor did they expect to. The goal of one vendor, a semi-retired couple, was strictly to share what they enjoyed doing while providing something healthy for the community.

Our goal is to pay for our seeds and our fun things...We’re not in it to make money. If it was our prices would have been higher at the market...Oneida’s market is very friendly, it’s a community event. It’s more than just going there to make a profit, because this year not going to market much, we missed that contact with the vendors and the people who are coming as customers.

Another vendor, also retired, expressed some frustration over the low prices found at market (discussed in more detail in the next section) but also emphasized that he sells at farmers’ markets to stay busy in his retirement and have some social interaction he wouldn’t have otherwise.

Relationships also created ways for people to access local food that they might not been able to buy or grow themselves. As Alex said about his life in college,

...we knew a lot of growers in the area. There’s a lot of CSAs, there’s lots of organic farms and a nice farmers’ market...We just kind of got in with a lot of those people...we didn’t really have to grow because we knew a lot of people that did.

Relationships might get you to that farmer’ market, or let you know who has the first pumpkins, or who has an excess of strawberries that they just want to get rid of.

Interviewees overwhelmingly felt that healthy local foods were accessible in the community,

through markets and some of the relational avenues mentioned previously. With this in mind, I next discuss the access, availability and demand for local foods within Oneida today.

Access, availability and demand

Access often refers to the affordability of healthy food and the hours and locations of food vending sites (Guthman 2004; Allen and Guthman 2006). Increasingly, more attention is being paid to the lack of healthy food that is affordable, if even available, to lower-income households. Furthermore, attempts to include a diversity of people in the local food system involve removing barriers to accessing local foods, whether economic, cultural, or geographic (location). Oneida appears to be doing a good job of beginning to make local foods accessible to all members of the community. All those interviewed expressed that local foods were readily available in season through gardens, Farmers' Markets, road-side produce stands and even in major supermarkets. This availability has increased dramatically in the last ten years and more farmers' markets start every year. As one person said, *"Anywhere in a 20 mile radius there will be a farmers' market every day in season."* The markets are well advertised through different media outlets, are open at different hours of the day and many accept SNAP benefits (the new name for the federal food stamps program). The Oneida Farmers' market also accepts benefits from different tribal food distribution programs.

Interviewees seemed to agree that, for the most part, local food is also very affordable to buy, though the reasons for this varied. One of the Oneida Farmer's Market vendors commented that, *"Most people will know they get good measure at the market, a lot of time you'll throw in an extra...anything that didn't sell went to the food pantry..."* Another vendor said, *"...you try to grow the best produce possible. It's the best produce for a fair price."* There still seemed to be a stigma, though, or at least an association of local foods and home cooked meals with "rich people." Anita made the comment that her kids, *"They complain about other people's houses food all the time, that they don't cook at their houses"* and later said about the school lunches, that she thought her kids disliked the school food because they had a palate for home cooked food. They disagreed, saying, *"No mom, it's not just us, it's not like we just like really rich people food."* The kids thought the cheaper food tasted bad,

but didn't associate what they liked as something snobby; or, they may not have themselves wanted to be associated with what might be considered "rich people's food", which from this conversation seems to be associated with home cooked meals. So, despite the affordability that many in the community identified, local food may still be associated with a higher class or socio-economic standing. Many of those interviewed did think that the price for local meat, for example grass-fed beef or bison raised by the Oneida Nation Farm, was too expensive for most people to afford, including themselves. Meat chickens raised by Tsyunhehkwa, and sold at the same prices as an organic chicken from any major retailer, were also seen as too expensive

The majority of concern related to accessibility of local foods however, was not over availability or affordability, but over whether the majority of people knew how to cook whole foods like fresh vegetables, or had a "taste" for them. One person shared a story about a coworker's son who came in to their workplace one day asking why carrots always taste like dirt. It seemed that the younger generations have grown up not eating vegetables or preparing food. Youth who attended Longhouse ceremonies were said to have trouble cooking foods to bring to share after ceremonies because they had never cooked before. Others wondered whether community members were truly noticing the amount of local food available, which was apparent to them as local food enthusiasts. *"It's not difficult to find I don't think, but again, maybe it's an awareness. Once you're aware, it's just obvious."*

Some frustration was expressed on the part of one of the market growers, who felt that most of the people selling at the Farmers' Markets in Brown and Outagamie Counties (the two counties Oneida straddles), were, *"...people they got a small garden, they got too much that week they just bring it in and put a real low-ball price on it"*. However, both Charles and Beth who might be considered small market-growers believed that prices were low because the economy in the area was slightly depressed as a result of the closing of larger factories, or the presence of single-parent or elderly households living on fixed incomes. Specialty vendors, selling artisanal cheeses or Alaskan salmon, for instance, only came to the Oneida market once or twice a season because they knew they would not be able to sell their products at a rate that could make them affordable for daily consumption. One interviewee was surprised that Seymour, a town just outside of the reservation boundary, had

been able to have a farmers' market at all because, "*It's a garden town—everyone in Seymour has a garden!*" In the end, all the growers and vendors I interviewed or interacted with found it important to provide good food at fair prices. So, why were more people eating locally grown foods?

Reasons for eating locally

Quality and better taste were the two most commonly cited reasons for purchasing local foods or maintaining a garden. Local foods were also thought to be fresher, more nutritious and of better quality overall than foods that can be purchased in the grocery store. As one man said, "*It really makes a difference in the taste of your chili or whatever you use it in, when you use your own stuff rather than the stuff you get from the store.*" One woman felt that it made sense to eat locally because, "*if you're living locally, what not eat locally? Your system is tuned to this environment; why bring something from another area in?*" Others simply thought that fresh foods—ideally picked that day—were simply the best foods you could eat.

The way people ate and what they ate often determined what crops were planted. Mark, the produce vendor, decided to plant white corn, though it requires a lot of labor, in part because people were coming into his small store asking for the corn. "*Well, nobody else didn't have it around here, so I figured I might as well get started and do something you know? Then, there's good demand around here too so I started doing it.*" The white corn was often talked about as a necessity, "*At least they know I got the corn here if they need it.*" Corn was always needed in order to make foods shared at holidays and family events or for people practicing the traditional Oneida religion who needed the corn for use in ceremonies. Mark, the produce vendor, reported that the majority of his sales were to Ho Chunk, Menominee, and other "*out of towners*"; he thought this might be because of the variety of produce he had in addition to corn. It may be that community members growing corn and tribal programs which make the white corn available are providing for the majority of the local demand, which Mark is supplementing. There is a steady and growing demand for white corn. Tsyunhehkwa is working to make dried corn available in all the tribally-managed gas stations, further indicating that demand for white corn is on the rise overall.

Several sources reported that the Oneida Orchard (tribal program) which grows a variety of apples and other fresh produce for the community, had problems growing the white corn every year. Unlike Tsyunhehkwa who sells the corn (some donations are made to people and programs for special occasions or ceremonies in exchange for the community-wide help at harvest), the Orchard would allow tribal members to come and pick corn and take it home with them if they brought a food donation for the Oneida Pantry. Both of these programs are well-known. Often, when a gardener knew the Orchard was growing corn that year, they would not plant white corn, but would plant another variety, such as sweet corn or a blue corn used in ceremonies and for medicines. However, no one interviewed relied on the Orchard, or Tsyunhehkwa, solely or every year for the white corn; it often just freed up their garden and their time to grow something else. In addition to all the benefits cited in eating locally, gardeners found that they could also save money, feel healthier, and find satisfaction—mentally, spiritually, or physically—by working in their garden.

Saving money, being healthy, and finding satisfaction

“There were nine of us and I put in an acre garden...I would can as many as 400 quarts of anything during the season.”

Several people who grew up on the reservation spoke of how their small plot of land supported their large families, with anywhere from five to twenty family members living off food produced from their garden, as well as hunting and fishing. As John, an elder, said, *“My dad had fourteen acres, and they used fourteen acres. All us eight kids had to work at it.”* The entire family worked in the garden and this provided healthy food, exercise and time together. It would be a rare case today for families to approach gardening like this—as a household responsibility and as the primary source of food—but people raised this way were proud of their upbringing; that despite being poor, they could eat and eat well! Today, some of this sentiment remains as people, without prompting, shared tips for keeping their gardening costs lower, like starting seed buying clubs to share seed packets with friends and coworkers, to finding sources for free, good-quality manure. The largest expenses people reported were in seeds and fertilizers/compost so these methods developed over time helped keep their gardens affordable. Jean shared a story about her mother’s prized garden,

When the paper towel company—and I don't know who she bought her paper towels from—if you bought so many paper towels you got free seeds. So she saved the UPCs and she got this big box of seeds and planted all these flowers on the side of the house. And people would come over and take pictures! And the rose bushes she got for free too. There was an ad in the paper to come dig up these roses...So she was really resourceful and knew how to take care of things, so it was always really nice.

Many people also demonstrated a “do-it-yourself” mindset, like Beth and her husband who built an entire greenhouse from “scratch”, including bending their own metal pipes for the frame, so that they could save on building costs (they estimate the savings at \$3,000 in exchange for their “elbow grease”). Many, particularly the elders, thought that gardening would only become popular again when it became an economic necessity. John said, “*They have to go back [to gardening]. They're not going to get a good job, they're not going to get no money...They're going to have to do something...You don't have to have much space to have a good garden if you take care of it.*” While saving money was important to gardeners who were interviewed, they also expressed a deeper level of satisfaction they experienced when eating food they had grown themselves.

Beth was raised on a farm and grew up eating food she and her family had raised, yet it didn't seem to get old to her. She shared that, “*I just think it's so rewarding to grow your own [food]. The satisfaction of going out to pick something you've grown; and maybe it's even more enhanced because we grow it right from the seed, the little seed.*” And Alex stated that,

I don't know, if you've got time to be all philosophical about stuff and maybe you'd appreciate it a little bit more, have a deeper satisfaction with understanding where that food came from: it came from Duck Creek. My grandpa caught that net full of suckers or my dad caught that walleye. I think there's more satisfaction; that's got to be healthy right?

Many people also expressed that it just felt good to be outside, whether in their garden or when hunting or collecting wild foods. Through finding joy in what they do, people begin to make new habits and from these habits grow traditions. As we see in Oneida, the process of making and maintaining traditions happens at both the individual and the community level.

Defining tradition and making new ones

“To the ancient Indians of the Americas who cultivated many of nature’s most nutritious foods—foods that were adopted by New World colonists and passed along to us as part of our heritage.”

(Wilma and Vernon Hays in *Foods the Indians Gave Us*, 1973)

The Oneida community has always been a diverse one, beginning with the mix of Oneida and Euro-American peoples which, anecdotally, were primarily of Polish, Finnish, German and Flemish descent who came to the reservation in increasing numbers after reservation lands were available for sale as a result of allotment. This created what many people referred to as a “checkerboard reservation.” (It is also important to note that Oneida territory in New York was originally secured through a tribe-to-tribe agreement with the Menominee in the 1800’s.) Community members also spoke of working throughout the region with Mexican immigrants and people from Central and South American countries during crop harvests. A large Hispanic community is present in Green Bay today. Two of the interviewees expressed pride and interest in foods from both their Oneida and Mexican ancestry, having one parent of each heritage or ethnicity. Today, this mixing from “some of America’s melting pot” continues to change and influence the local food system. For instance, the increasing numbers of Hmong growers new to the Oneida Farmer’s market were said to offer the most diverse vegetable selection of all the growers and are a welcome addition to market. One focus group participant, now too old to have a large garden, said he had let a Hmong family use his large garden area to grow food for the market. He was grateful for the family’s interest in gardening and was glad to see his plot of land continue to be used for a garden. Renters of community garden plots were also incredibly diverse and the number of people and families from different ethnic backgrounds growing together was astounding. The main focus of this research, however, was on interactions between Oneida tribal members and non-tribal members living within the reservation. Respondents to a community-wide food survey conducted by OCIFS, working with other tribal programs, were in order: Caucasian (61%), Oneida 30%), and other Native American (6%) (Oneida Community Food Questionnaire 2010).

In this context of a “checkerboard reservation”, defining what is traditional is somewhat complicated and fluid. Poverty also impacts how people see what’s traditional and

what is not. These understandings surfaced from questions related to the benefits of traditional foods, or about differences between local and traditional food. Answers like, “Traditionally in the sense that you’re eating seasonally,” were common, as was the response that the Three Sisters and prepared white corn foods like KanΛ ‘astohale’ (cornbread) and corn soup are traditional. A few people thought that foods like salsas, pickles and jams which have become common could be considered traditional when they were homemade. As Samantha said of the changing definitions of traditional,

We had to make adjustments because we were so poor, it becomes traditional...It’s hard to distinguish what was really here prior to when we were in such extreme poverty, because we had lots of fruits and orchards and all kinds of beans and all kinds squashes. We’ve come out; we’ve got a few [heirloom crops] left.

Wild foods are also experiencing a similar resurgence. Foods that were hunted, like deer and rabbit, and foods like wild strawberries (*Fragaria virginiana*), raspberries (*Rubus idaeus*), and wild greens like milkweed (*Asclepias L.*) and ferns (primarily fiddlehead, or ostrich, fern: *Matteuccia struthiopteris*) were all seen as traditional foods as well. Sunflowers and sunflower oil came up in one of the focus groups as a traditional food of the Iroquois. Some of the wild medicines or the greens were not found in the Oneida homelands in New York, but became part of a traditional food diet as Oneida adapted to their new location. While anchored in an Iroquoian worldview, the boundaries of what is traditional are constantly moving. This could be seen in how people talked about corn. For instance, some people referred to the white corn as Indian corn, while others referred to a calico corn grown locally as Indian corn and preferred to call the white corn, well, white corn. As one woman said, “*Calico corn or Indian corn, whatever they call it, that’s all I wanted because we had another place that had white corn and sweet corn.*” In this sense, large retailers were also seen as playing a role in helping revive traditional foods if they carried things that are used in preparing foods for ceremonies in the Longhouse; for example, food like dry beans or strawberries. People expressed that they did not want to rely on these retailers but were grateful that they could get foods they needed in the interim while the community continues bringing back and to some extent redefining traditional foods.

The benefits of traditional practices, however, were even more fluid. During focus groups, people were very clear that it was not entirely necessary to categorize foods as local

or traditional. The primary distinction that people made between local and traditional foods was that traditional foods need to be grown organically or *should* be. In this light, traditional practices such as fertilizing with fish or using natural seed soaks, for instance, become tools which help maintain a garden crop as a traditional food. Still others felt it was important to share new skills, like saving tomato seed with anyone interested, as well as old skills, like skinning a raccoon. The foods themselves were a means of sharing something old—an heirloom crop, Iroquois culture, etc—as something new. One woman described giving an heirloom Hubbard squash to a “foodie” friend:

They grew some at the Apple Orchard this year and I go to a physical therapist who's a real foodie, and I brought that squash in for him and he didn't know what it was, he didn't know what to do with it. I'm like, 'It's a squash! You cook it like you would any other squash!' So, he took his son and they took a hatchet and they opened it up, the old fashioned way, and his son just had a blast. And they said it was the most delicious squash: it was so sweet, they absolutely loved it. So, I think they saved their seeds—they've started a new tradition themselves!

From the ubiquitous fry bread known throughout Indian Country to Oneida's well-known “Salt Pork Row”, tradition is constantly being changed and questioned. In addition to their summer pow-wow, one of the largest community events in Oneida is the Apple Fest, held at the Cultural Heritage Center on the Eastern edge of the reservation every fall. Here families gather together around a row of old timber-framed houses that were moved to the rolling expanse of the Cultural Heritage Center grounds from Salt Pork Road. This road was located in the heart of the reservation and was where, one could guess, people raised pigs and cured (salted) pork. Apples from the large Oneida Orchard are available at the Fest and there are apple pie eating contests, hay rides, and tours through a traditional-style multiple family longhouse as well.

If anywhere can be singled out as America's melting pot, I would argue it is reservation communities who have undergone so much rapid change resulting in acculturation and now a return to their own, unique traditional culture. To see these as two distinct cultures, for instance, the timber-frame home and the longhouse would be a disservice to all the community and relationship building that has occurred over the past 200 years. As an outsider, I can say this more easily because I ostensibly have nothing to gain or lose from these distinctions; however, the diversity of foods, livelihoods and gathering places

that existed in the time of either the family longhouse or the family timber frame house are extremely appealing as resources or models to use in reviving a local food system. Making new traditions is important to keeping culture alive; it's blending the old and the new that may be a sign of a culture intact. This blending can only happen, however, when both cultures are valued; otherwise it's too easy to relegate one or the other to a place of minority influence. Through acts and laws that assert sovereignty, the Oneida are increasingly exercising their power to define what they do and do not want as they work to improve their community.

Sovereignty and defining food sovereignty today

The intersection of agriculture and sovereignty is most visibly seen in how land-use and land ownership within the Oneida reservation has changed over time. Through the Dawes Allotment Act of 1887, the Oneida reservation was allotted to individual tribal members beginning in 1891 (Metoxen Oneida Cultural Heritage Bulletin No. 6). Allotment was and continues to be a contentious issue within many reservation communities as the policy was intended to further assimilate tribes and tribal members into Western society through individual land ownership (Canby 1995). In rural areas, this also meant that tribes were encouraged, or forced, to adopt Western agricultural practices. What resulted on most reservations, however, was not economic growth for the tribe as a whole, but rather the accelerated loss of tribally owned and managed lands within reservation boundaries. Steven spoke of this process of change in Oneida:

I lived over in Chicago Corners and over there most everybody had a garden. Most everybody, all the Oneidas. We were surrounded by farms because back then our rez was really checkerboard. I think by 1925 there was only 600 or 650 acres left of the 65,000 acres.

By the 1950's, Steven's family, including his grandparents, shared a 14 -18 acre remnant from allotment. They farmed it extensively as it had to provide for 12 – 15 members of the immediate family. Not only was this a small land base to support a large family, but families shared smaller and smaller land parcels as individuals would lose their land to taxes; sell to white farmers or logging companies in an attempt to alleviate their poverty; or have land taken by a local BIA agent who was federally-appointed to make best use of the

reservation land. This usually meant more land was sold to white farmers or logging companies. Eventually, the tribe as a whole retained ownership of less than 1% of its original reservation territory as their reservation land base went from 65,430 acres in 1838 to 200 acres in 1967 (Metoxen Oneida Cultural Heritage Bulletin No. 6).

When asked whether there were any farms on the reservation today, almost all interviewed spoke about the quantity of farmland now owned by the tribe. The tribe has purchased anywhere from 6,000 to 12,000 acres of farmland over the last 15 years where they grow “*agricultural crops—hay, corn, soybeans, things like that.*” The Oneida Nation Farm itself is a large enterprise run by the tribe and a key component in the work being done to create food sovereignty through the Oneida Community Integrated Food Systems (OCIFS) umbrella programs. The farm raises row crops and grazes a large beef herd and a large bison herd. In its operations, the farm integrates conventional agriculture with strict environmental quality standards; for instance, one large row crop field is buffered with a 200 acre wetland newly restored along the south branch of the headwaters of one of the reservation’s rivers, the Suamico. The Intertribal Agriculture Council, an American Indian advocacy and policy group working to develop agricultural economies on reservations, states that American Indian farmers’ primary barrier to success is a lack of stability due to land-tenure issues, isolation, and little access to capital or services (Smitman 1998). They found that the Bureau of Indian Affairs had no programs comparable to the United States Department of Agriculture which provided assistance to non-tribal farmers through conservation and other on-farm programs. As a result, Indian farmers and ranchers have been excluded from mainstream agricultural programs. In buying farmland within the reservation and in this case farming in a way that incorporates conservation practices, the tribe is taking back control of its land base and, I would argue, asserting itself as a sovereign nation.

Some do not see the Nation Farm as keeping with traditional Oneida practices because they are raising beef, in part, by feeding corn and silage; it’s a very large scale operation; conventional fertilizers and pesticides are used, as well as genetically-modified corn seed. Yet, the Farm was still seen by many as a model example of “good” conventional agriculture:

I always talk up our Farm; I think they're doing a fantastic job. You know, conventional farming isn't always portrayed in the best light, but Oneida Nation Farm does a great job. I think they're doing a really good job balancing the natural environment and their farming which, to me, makes them a model conservationist. You can have farming and you can have clean water. We monitor the health of our streams around here...and they're as healthy as you're going to find anywhere. I believe it's because of all the things we are doing around that. Putting the buffers in, having minimum setbacks, putting nutrient management plans in place. It's farming in a sensible way. We're seeing trout come back!

In addition to stable access to and control of land, another aspect of sovereignty is the ability to create and enforce regulations within the reservation boundary (and in some cases off-reservation through usufructuary rights). While it is not always clear from this research where tribal jurisdiction began and ended within the reservation, it was clear that where the tribe owned the land, whether in trust, in fee, or by an individual tribal member, they were able to enforce environmental regulations as they saw fit⁵. This is particularly salient in relation to an agricultural community where a mix of diverse farms is present, with each farm required to follow specific environmental regulations. As one person commented, “*We (the tribe) have come up with a plan for any of the farmers who rent tribal property to farm on. They have to have a buffer zone between **their** crops and **our** water ways so we can try and catch all that stuff and try and filter it out before it gets into the streams.*”

When asked, interviewees all felt that environmental regulations were better adhered to within reservation boundaries compared to outside of the reservation; the tribe did a good job at practicing agriculture; and the land was in general, “clean.” One person, when asked whether there were different regulations on-reservation versus off-reservation, responded that:

I think around here, we raise the bar, we really do, we try to do things a little better and we stick to it. I think we just follow through. There's regulations and we follow through with them. Maybe you get outside and there's just no real enforcement mechanism...It's doing things the right way and I guess we have that luxury—we can do things the right way.

This ability to “raise the bar” has developed over time, improving as the tribe maintains sovereignty over different matters. We can gain insight into the context in which the tribe

⁵ See <http://www.iltf.org/land-issues/sovereignty-and-jurisdiction> for a more in-depth discussion on land ownership in Indian Country.

asserts this right to negotiate and enforce regulations in the following conversation that occurred during the focus group with elders, which included one of their younger nephews, Joey, who was also interviewed separately (he had stopped by to pick up his relative and joined part of the conversation with the elders). They are talking about how people enjoyed eating fish and then move into the decline of fishing within the reservation (Figure 6).

Josephine: The reason you have to go to Pamperin Park is because of the dam. Otherwise those fish used to come up the stream to spawn all the way.

John: I think they came this way. Or maybe that way (laughs).

Josephine: Whatever way they went!

Marie: Yeah, if you can the suckers just right, they taste almost like salmon.

John: You could eat them bones and all.

Joey: People will come around and in the back of their trunk, having those suckers, and they'd go around selling them. It was a big thing in Oneida.

All: Yeah, yes.

Joey: You can go other places and you don't really hear about people eating suckers.

Interviewer: When did that stop?

Marie: The 70s maybe.

Josephine: Yeah, I think so. And probably a lot of it was due to the paper mill pollution.

Marie: Then they had the controversy too for awhile about licenses. They have licenses, but in reality they didn't have to because it's the water that flows through the rez. So that was another issue that made people stop.

Josephine: That was a treaty boundary issue.

Figure 6. Focus group discussion of sovereignty and environmental issues in relation to fishing.

This conversation reveals the complex situation on the reservation in regard to the use of land, whether it is clean (pollution) and whether tribal members have the right to fish the waters (licenses). Today, as fish slowly return to the reservation, many people find cause to celebrate, whether as a result of the ability of the tribe to tackle these issues by asserting its sovereignty, or simply because they are slowly beginning to see their local streams as a source of food once again.

In addition to the conservation and legal work the tribe is engaged in, people also shared many positive comments about all of the tribal programs that are a part of OCIFS.

They are examples of the blending of old and new practices towards a common goal: food sovereignty. As the Oneida tribal government affirms its sovereignty through the creation and enforcement of existing environmental regulations, the large-scale conventional Nation Farm is leading by example. One of the results is a tribally-owned land base that is becoming ecologically vibrant again. Still, the Oneida Nation Farm itself does not produce much food that is meant for human consumption and beef and bison meat is expensive. The tribe is working to address these issues of affordability; for instance, by donating beef and bison to school lunch programs and to community events. By and large, interviewees felt this was a good step. Those interviewed also shared their experiences and beliefs on what food sovereignty specifically means to them.

Defining food sovereignty

“Then you start exercising your power because you start to realize that you have power.”

The concept of *food* sovereignty did not naturally come up in many of the interviews or focus groups. As the interviews progressed, I was curious and began to ask the few remaining interviewees their thoughts on food sovereignty. The typical response in relation to food sovereignty specifically fell somewhere within the lines of, it’s all well and good to talk about it, but you have to do it. One person spoke in depth about how food sovereignty is something that you do more than you talk about,

I hear people talking about it, but unless they’re growing their own stuff, it doesn’t mean anything...They can say how great it is, but the thing is you got to actually grow it. Like food sovereignty to me is being able to feed yourself. If you can’t feed yourself, how can you feed your friends and neighbors? How can you feed your tribe? How can you feed your community? If you don’t grow it, where are you going to get it? To me, that’s what food sovereignty means and then the next step is to have enough to put away so when they, like say, a long time ago, the Europeans came here and burnt all our fields. But they [the Oneida] had enough put away where they could grow this again. They didn’t have to tell anybody; like, ‘Ah ha, you burnt all my stuff but I got all this seed here.’

Recollections of this tactic used by Euro-colonists to eliminate American Indian tribes—the burning of food stores and corn in particular—points to a time when the Oneida were *so* food secure (food sovereign) that even when Euro-colonists burned their fields and food caches, the Iroquois still had food to eat and seeds to plant.

Another person, when asked why it was important to bring more traditional knowledge and related skills back into practice, said simply, “*It’s all about good sovereignty; it’s being independent.*” In creating food sovereignty, relying on and rediscovering the skills and knowledge of their ancestors—who faced direct pressures of eradication by Euro-colonists—seemed to play an important role not only in recreating the local food system, but in using food to form a sovereign, Native identity. This statement also raises questions of independent from *what* or *who*, and exploring these questions brings greater meaning to our understanding of sovereignty and food sovereignty.

For instance, a few participants and community members, when asked what food sovereignty means to them, spoke about Monsanto, a very large global agricultural corporation, and what power the company has over the food system and over corn seeds in particular (Monsanto is the forerunner in developing and marketing genetically-modified seeds and chemical pesticides). Conversations seemed to focus on the political power this large corporation wields. This struck me as interesting because when asked about seed-saving many people seemed to save seed because it was cheaper, increased the amount of diversity in their garden, and was a means of identifying with their cultural heritage. Seed saving wasn’t a political act per se, and gardeners chose what seeds they wanted for a variety of reasons. It seemed that seed saving was more an assertion of identity, self-reliance and at the same time, *interdependence* in that seed saving often meant working with other community members to gain access to either the seeds, the knowledge to save seeds, or both. However, this relation of food sovereignty to the political power of large corporations like Monsanto makes sense in that food, and in this example, seed saving, is a means of relating sovereignty, a very political concept, to identity.

Further, being able to identify and talk about why you do or do not want something is in and of itself an assertion of sovereignty. In this light, debates over what is proper food to serve at the Longhouse are evidence of sovereignty as it relates to food:

We have this big debate in the Longhouse. In the 70s when the Longhouse was reconstructed, people would bring foods for ceremonies—it was homemade foods because they didn't have the luxury of going to Festival and buying a bag of Oreo cookies and bringing it to the Longhouse. There just was no money for that. And now when you go to the Longhouse, it's a lot of Oreo cookies and donuts, foods that we don't have a connection to. The whole point of having those ceremonies is in part to have those foods. There's a disconnect among some of the people. So we have that discussion (pauses) and people get offended.

This statement in particular reveals that food sovereignty is also fluid, it's being (re)established, and in the interim there is a disconnect within the community over what is appropriate, what counts as traditional food or healthy food.

In her extensive work on Florida Seminole gaming and what she termed “local sovereign interdependence”, Jessica Cattelino (2007) called for more analysis of regional politics within studies of American Indian sovereignty. She proposed that,

This would show not only the ways that sovereignty escapes the ‘federal Indian law’ framework and produces and challenges regional politics, but also how indigenous sovereignty is forged and maintained less through formal legal processes than by everyday relationships within and across communities, families and generations” (263-264).

In this statement, Cattelino seems to propose that it is indeed these “everyday” conversations which, in part, form the basis for localized sovereignty and sovereign decision making which occurs throughout Indian Country today. Again it is about the particular community which exists in relation to itself, to other nearby communities, and then to regional, national and international political entities and institutions. But individual sovereign Nations begin to express their sovereignty locally in the mundane, in the everyday decision making. The Oneida’s environmental regulation and monitoring of agricultural production within the reservation, as well as the discussion of which foods are appropriate for the Longhouse both provide excellent, localized examples of this process.

Trying to understand what food sovereignty means to people, whether at the individual or community level, also sheds more light on the process of defining tradition. Maybe it doesn't matter if people call a method or a food traditional, or make the distinction, if action might be what ultimately matters the most. Still, making the connection between food, beliefs and values was and is important to everyone who was interviewed.

Furthermore, the role of traditional food and Oneida culture in reviving the local food system cannot be ignored. For instance, the fact that the same group of Oneida who started Iroquois Farms also helped bring back the Longhouse indicates that part of the motivation for farming was the same motivation for practicing traditional religion: to be Indian, to be Oneida, and to be in control of your own life and the fate of your community. The impact of food system revival then can be quite profound. Respondents shared some of the impacts of food system relocation that they have observed in the community in recent years.

Outcomes of food system relocation

Improving health

When asked what would happen if more people ate traditional or local foods, people overwhelmingly stated that people would be healthier; it almost seemed like an automatic response. Obesity is the most visible health-related problem and was said to affect all members of the community, both tribal and non-tribal. This was followed by diabetes and high blood pressure which were said to be more common among tribal members. Several of the interview and focus group participants had diabetes, were at high risk for diabetes, or had recovered from cancer (some had had cancer more than once). Many people also spoke about the role of local foods in improving mental health as well, from helping with depression to helping people clear their minds. People also felt that growing a garden assisted people by encouraging them to be active and do something for themselves that is healthy. Participants all felt a special connection with their garden, whether, mental, physical or spiritual. Mark said that since he was working with the corn all the time, it became a part of his daily experience, even during the winter months because of the time he spends shelling the corn. Samantha shared how much she valued her small garden of tobacco plants because they kept her centered, focused and thankful.

Cancer was also closely linked with agrichemicals, manure ponds, and pollution from paper mills and other nearby industries in Green Bay. People felt strongly that reducing the amount of chemicals and artificial fertilizers used in growing food would help reduce high cancer rates in the community. For instance, one person said organic foods are, “*better for you. There’d be less cancer and everything else. There’s just so many people getting cancer nowadays it’s just (pauses) the stuff that gets sprayed on, no one knows what they’re eating.*”

Charles had a moderate view, but still felt that, *“food is healthier for you, the less chemical you use. You don’t know for sure, some say it cause cancer, you don’t know that for sure, but I think it’s healthier for you.”* I address this further in the section “Improving environmental quality”. One person had a somewhat different response to, “What would happen if more people ate local foods? In addition to improving health, Beth added, *“If they ate more, you’d have to come up with a lot more farmers!”* This is a good segue to talk about the role of local foods in creating economic growth.

Economic growth

Overwhelmingly, gardeners were not interested in expanding their gardens in order to make money from their garden. Of the two Oneida Farmers’ Market vendors interviewed, Charles was trying to make a little supplemental income for retirement, while Beth and her husband were just trying to cover the costs of their own extensive garden. Yet the Oneida farmers’ market expands every year, the diversity of vendors is increasing, and the amount of time the market is open is lengthening. Other opportunities for selling produce including already established produce stands and in entrepreneurial fashion, such as the community member who drives around selling burritos he made at home. The produce vendor interviewed also saw his produce stand as a hobby and any income as nice, but not necessary. In all cases the most valuable aspect of participating in market or selling produce was to have social interaction and exercise. Yet economic opportunities do exist if growers ever did want to create a business.

For example, the produce vendor travels to Michigan twelve times throughout the summer to purchase a truck load of blueberries, peaches or apples which he says his customers want because of the high quality and good flavor. Another area grower also sells blueberries from Michigan in his farm stand. In this case, it seems the demand for produce and the market is already established; this could provide an opportunity for someone looking to start a farm locally if relationships were developed to the mutual benefit of the grower and the seller. In addition to circulating money locally and improving the local economy, smaller farms were thought to have many positive impacts on the environment.

Improving environmental quality

Among those interviewed, there was a strong stigma against drinking water right from the tap and well water was said to run brown and stink in many areas. Mark and Steven didn't like the use of liquid manure because they see it as a waste of water. They were both also very concerned with the smell of manure ponds and worried that liquid manure was more likely to contaminate ground water than dry manure. Others reported that well water was contaminated by nearby landfills. Organic agriculture, certified or not, was seen as way of reducing the use of chemicals or the use of liquid manure on fields. People felt good about their gardens; that they were helping ease a burden on the land that came from large scale agriculture. All people felt that local, smaller farms can and are to some extent already having a positive impact on the environment overall, whether the farm is organic or not. One person felt that if nothing else, it was easier to monitor the quality of food and the environmental impact of different practices used when the farm was small, which he defined as ten acres or less.

As discussed previously, the role of tribal initiatives in restoring the local ecosystem is important as it also allows for traditional foods to return. For instance, one person stated that, *"The tribe's got the environment program that's doing all these kinds of things. They planted trout last year. So we got two streams now that have brook trout (Salvelinus fontinalis), a native trout, but I remember catching them when we was kids."* Everyone expressed a desire to be able to "use the land" and that the air, land and water have to be healthy enough to support different activities like fishing, hunting or collecting wild foods. Alex commented that,

The Oneida Nation Farm, they're able to farm in a sustainable way, sustainable in the sense that we're seeing improvements, in water quality specifically. We can measure that; there's lots more anecdotal information. More wildlife, more birds, we're seeing more interesting wildlife, rare things.

Several people also said that in the past, grazing practices which allowed too many cattle and horses in an area—and in streams—caused the wild fruits like blackberries, raspberries, black caps and choke cherry (*Prunus serotina*) to more or less disappear from the landscape. *"What they would do, the animals would eat the young shoots so that's why you don't have berries down in the flats now. But, they're coming back!"* Deer were also not

seen on the reservation for many years and it was believed that cattle management practices destroyed their habitat by overgrazing the forest understory. This is changing though and one person excitedly said that he could hunt deer on the reservation now, unlike when he was a kid; another had a patch of wild raspberries growing in his backyard that he happily claimed he did not plant. The resurgence of berries and mammals like deer may be a result of the decrease in the number of small dairy herds and smaller farms in the area. However, animal husbandry is more heavily regulated today and the tribe owns much more of the reservation land and can enforce regulations. Along with improvements in health and positive contributions to the local economy and environmental quality, many felt that local food systems also contributed to the revival of the community as a whole.

Community revival

In addition to the growth and diversity in the biotic community, the Oneida human community is experiencing its own revival as a result of the relocalization of the food system. Community members rely on each other as resources, whether for information, inspiration, or a needed material good; or sometimes just as someone to eat and share with. While a very simple concept, sharing and generosity are tangible components of a community that is self-reliant and resilient in the face of global price fluxuations in food for instance. As Raj Patel (2009), a well-known food sovereignty advocate and scholar, proposed in his book, *The Value of Nothing*, “The opposite of consumption isn't thrift. It's generosity.” Throughout the interviews, focus groups and participant observation, the amount of sharing, or generosity, and cultural exchange that was happening around food was very apparent and seemed to strengthen cultural identity while creating new avenues for people to interact and experience a piece of each other's lives and culture.

When asked whether they felt that eating locally has a positive impact on cultural identity, the overwhelming response was yes! Non-tribal members thought this impact was stronger for tribal members. However, the Oneida reservation is fairly diverse for a primarily rural community (one edge of the reservation is within the city limits of Green Bay). As one woman said, “*When you say cultural, I right away think of eating culturally. Booyah is Belgian, my mother has Belgian heritage and Booyah's a big thing. You go anywhere else*

and you never here of Booyah.” One man shared a story about how he’s always grown radishes and when his Polish grandmother passed away he was given a small crystal dish that he found out is a salt dish meant for dipping radishes. In talking about deciding what vegetables to grow, another woman shared that since she is, *“half-Mexican, salsa is an absolute.”* John joked about his son-in-law, *“a white guy, and he can eat that corn soup like it was candy! Boy he likes it!”*

Corn soup is a part of every gathering for Longhouse ceremonies and culturally-based foods are also served at other community events. For instance, one woman brings homemade corn soup and apple pies annually to voter-outreach events. As Josephine said, *“Well, just about everybody eats corn soup. There’s a few people that don’t, but most every time you have a funeral or a wedding, or any event, we have corn soup.”* The Belgian booyah soup was served at Tsyunhehkwa’s 2010 Harvest and Husking Bee one day; corn soup was served the other day. This demonstrates a needed level of comfort, a willingness to accommodate or honor other people’s heritage, which can unite a community. It’s simple but it is a way they share their culture or experience someone else’s. The festival offers a welcoming place to interact and talk, to understand someone on a more personal level and perhaps even overcoming a stereotypical view of that person and their life, their culture.

A new kind of reliance

Furthermore, community revival through local food system renewal seems to go beyond these cultural exchanges: neighbors worked together; people were outside; the farmers’ markets provided places for diverse groups to interact; money spent on local food circulates money within the local economy; and students learn in a garden together with their parents and teachers. These are examples highlighted by members of the Oneida community. As people ate or grew more local food they increasingly became part of a community where they are interdependent with other people, each giving and taking. This local food system, like many others no doubt, is reliant on the creation and maintenance of relationships which go beyond simply eating together. These relationships are essential to producing food, learning to store and prepare food properly and making sure everyone has access to local

food. It is learning and growing together while finding ways to co-exist on the landscape. Jean appeared to feel the strongest about the role of community in local food systems:

If more people ate locally, we would have a stronger community. We would have a stronger identity of who we are and a stronger relationship with our neighbors. We would have to rely on each other for that food, instead of relying on Wal-Mart and McDonald's, who we have absolutely no relationship with—just financial.

Reviving traditions

As part of community revival, traditions are created and revitalized as well. I asked George, who is well-known for his heirloom beans in particular, where he first got all of his seed; he responded, “*I carry them all the time.*” This simple statement resonates with me because it brought forward a sense of responsibility, of history and commitment, while simultaneously portraying a sense of “time immemorial” and the totally mundane—just something that is done every day. He went on to say,

It's carried down from generation to generation. Like I say, I was brought up by my grandfather. You'd grow two or three kinds of beans and that's what you'd grow all the time. And we'd grow two or three and we'd hold them, we kept them. Everybody planted beans, but they all planted different, we didn't all plant the same beans. You planted that but you'd carry that, you planted your beans...there was like 50 or 60 types of beans at one time, and like 70 or 80 of corn.

More people are gardening for the first time and others are seeking to learn new skills. The revival of heirloom seeds is already evident among the gardeners interviewed. As more people become interested in seed saving, or people starting a garden for the first time do so with heirloom seeds, these traditions will blossom and grow. Maybe the comfort and normalcy of this traditional practice, seed saving, that George demonstrated will also begin to be adopted by more and more people.

Like gardeners growing the corn in the mounding system to “just to try it”, people are experimenting with traditional practices; they are living once again. Tribal initiatives that have improved stream quality and brought back native fish species may also go a long way in reviving traditional fish catches and storage. “*We were fish eaters!*” as Ashley said. Deer, once a rarity on the reservation, have found their way back in the last few years. Local food is creating new avenues for accessing culture by providing an entry point. Ashley's process

of learning how to prepare white corn using hard wood ash exemplifies how and why people are reviving traditions around food.

Culture is also felt and experienced on a personal level as well. *“I thought of the Bear Bean because it has this beautiful red flower. It’s absolutely gorgeous and then you have this beautiful corn growing...it’s just so beautiful.”* This dedicated few, the small group of gardeners, hunters, and foragers who participated in this study, are for the most part very aware of what they’ve lost, and of what they’re trying to bring back. The path, however, is not clear and though resources—whether for knowledge or materials not always known, the effort is being made to build something better for the community. As Alex stated, *“It’s just a matter of time.”* While there is momentum and people are seeing signs of success, there are still many challenges ahead as the Oneida community continues on the path of food system revival. These challenges are addressed in the next section along with suggestions that arose during the interviews and during participant observation (Table 5).

Challenges in food system relocation

Table 5. Challenges and suggestions in strengthening food system relocation.

Challenges to food system revival	Suggestions and strategies for success
<ul style="list-style-type: none"> •Land access and stability •Climate change •Loss of infrastructure •Time constraints and single parents •Growing sense of individualism •Addressing dependency •Negation of cultural identity 	<ul style="list-style-type: none"> •Education, education, education •Create new ways to access land •Provide internships in food systems •Offer more local foods in tribal institutions •Link cultural teachings with skills •Be encouraging and supportive of each other

Land access and stability

While the tribe is actively buying and controlling more land within the reservation, respondents still experienced uncertain access to land. Many reported moving a lot when they were younger, from house to house within the community, which made it hard to have a garden. Others left the reservation area entirely for military service or to find a job in a nearby town or in their field of expertise. All but one person felt that it was hard to be a

successful gardener when you didn't have land and had to garden on someone else's land, like a relative or friend. Community gardens can provide places for people to grow, but stability in home life seemed to be needed first and the community garden located close to their home. Many people wanted more land to have a larger garden and all felt that space was a big factor in determining how and what they raised in their garden. For example, even though she had some garden space, Anita said, *"I find that it's hard for me to grow somewhere. Like if I won the Lottery, I would be moved somewhere where there was lots of land and lots of woods. So, I could plant my corn, so I could have a good sized [garden]."* The youngest person interviewed in this study was 42, indicating that people in their 20s and 30s may be experiencing what the gardeners interviewed, now in their 40's and older, experienced when they were younger. For instance, one young person volunteering at Tsyunhehkwa this summer said he wanted to get a small cow herd together, but didn't have land or the money to buy both a small herd and land.

In talking about diabetes, one woman was very insistent that government programs and grant money were not going to solve the diabetes problem—what she wanted was land and their—Iroquoian—knowledge, back: *"I was really disgusted with them because I was thinking we don't need some money, give us some land! Give us our planting, give us our knowledge back...I'm pretty sure we know what causes diabetes: its poor nutrition, poor eating habits..."* Though the tribe is having success at buying land back from private ownership within the reservation, some felt that land in general was becoming too expensive for most anyone to buy. Charles shared that he paid \$15,000 for the acre behind his house, which he purchased to start a market-garden. It seems that these prices were "no problem" for larger entities, maybe even those like the tribe: *"Lots of the small people are selling, and all the big guys are picking up land no problem, so as soon as it goes up for sale it's gone."* This comment was in reference to the consolidation of land into large farming operations outside the reservation. In regard to tribal purchasing of land, one University extension agent I met said there was some contention in the greater community over the tribe buying land within the reservation boundary because the tribe did not have to pay property taxes to the county, which lowered its tax revenue.

In order for a local food system to be successful, communities need land and they need ecologically viable (healthy) land (Bell Sheeter 2004). Industrial (conventional) large-scale farms were not seen in a positive light by those interviewed partly due to their negative environmental impacts. As we saw with the enforcement of environmental regulations, sovereignty is expressed in the ability to regulate, monitor and ultimately improve environmental conditions within the reservation. However, the tribe does not control the globalized food system or urbanization which can influence the high price of agricultural land. Still, access to land is a key tenant of food sovereignty now and will remain a critical issue. In reflecting on the future of the food system, Charles wondered if small scale farming has a chance at being viable:

You would think the day will come when small will be profitable again. I don't know how but look at your big farmer: when they get ready to sell, who's going to buy them? Most people don't want that responsibility and definitely most people don't have that kind of money. You stay at this big scale and it's probably going to be big corporations only that own the farms. And then we will pay for food.

There were other factors outside of the control or ability of the tribe or its community members to influence directly; for instance, the effects of climate change and climate instability.

Climate change

When prompted, all respondents mentioned things like the role of local food in improving health in response as a benefit of local food. However, *every* respondent mentioned climate change with no prompting, though typically this was mentioned in response to a question about growing produce. About half actually said “climate change”; the other half expressed something like disbelief in regard to the amount and timing of rain received in the 2010 growing season. People who had been gardening in the area for anywhere from ten to eighty years had crop failures like they have never encountered. Josephine described her experience as follows:

But those root vegetables, except carrots, did not do good. They did not. Any of those cabbage type related vegetables. As a matter of fact, I picked a turnip that was about 2.5 inches and pulled it, I sliced the tops and the outer skin was all intact, but the inside looked and acted just like a sponge...I turned it upside down and the water would run out if it. It was that much water accumulated in that turnip! And that's the first time I ever saw that.

This is important because for many gardeners, root crops which store well and thrive in colder climates form a staple part of their winter diet. At least three people also lost their entire crop of tomatoes, another staple food in the community. In true relational form, some were able to get tomatoes from a relative or friend whose garden was on sandier or better drained soil, resulting in a “bumper crop” of tomatoes.

Though younger than Josephine, Alex has also been growing a garden his entire life and raising garlic at his home near Oneida for ten years. This year he had problems with disease on his garlic crop for the first time ever.

This past year was probably the worst year I've ever had gardening to be honest...It was so wet around here. We had over a foot of rain above normal for the growing season. Even my garlic—I've never had a problem with garlic, it's always been my thing; I grow great garlic, it's huge and it's just great! This year I had some sort of a disease on some the bulbs and even insect pests. It was in a lower spot and under water a lot of the season.

Environmental change, such as climate instability, is identified by some scholars as being a problem that is so large-scale it is outside the realm of traditional knowledge, meaning that a localized, living knowledge may not be enough to address problems caused by climate instability (Edgerton 2000). There is certainly some merit to this; however, within Oneida it was reported that sweet corn and field corn had more pests and disease in 2010, while the white corn did better than ever in most places. Perhaps this is because the seed, saved over so many generations, is better adapted to the area, or perhaps it's a function of smaller-scale production. Either way, this localized knowledge related to seed saving, as well as the more personal interactions with a crop that small-scale farming allows, may help growers adapt to climate instability.

Climate change is also likely contributing to changes in the local plant community as this phenomenon has been documented in other areas well-studied by ecologists and conservation biologists (Parmesan 2006). Many people spoke of the “disappearance” of a

few trees and shrubs. For instance, one woman wondered what happened to thorn apple trees, saying, *“You can’t find a thorn apple tree anymore. What happened to them I have no clue. My brother’s always figured they were browsed off with the cattle roaming, but my dad always had cattle and there were thorn apples, thorn apples and choke cherries.”* As she suspects, thorn apples (*Crataegus sp.*) may not have been overgrazed because many native varieties are poisonous or have thorns, as their name suggests. Choke cherries (*Prunus virginiana*) are more susceptible to grazing but other trees and shrubs were also said to be “moving north” as the climate changed. These included many of the different maples and oaks. Maple syrup is an important source of nutrients and calories and is honored in ceremony, and oak ash is preferred over other hard wood ash for processing white corn. Other necessities for a local food system that have disappeared from the landscape are human institutions: specifically, processing and storage facilities.

Loss of infrastructure

Many respondents recalled times when the milk truck came by each farm to pick up milk, or how they would take cucumbers, peas, cabbage, beans, beets and other produce to a sizing and processing facility nearby. Others, like Steven, took grain to the mill: *“I remember growing corn, I remember growing oats, corn and oats, oats and corn... Take it to the mill and grind it up and that’s what we’d feed the pigs with.”* Oneida and the surrounding area were at one time alive with small canning facilities, mills and even a cheese factory right in the town of Oneida. Today, a few small meat lockers remain but everything else is gone from the landscape. As Charles said, *“Most of the canneries are gone from this area. Get down by Fox Lake where I grow the sweet corn, the canneries are still down there.”*

While no one in the interviews saw this loss of infrastructure as a challenge to the recreation of a local food system, I propose that not having the factories and plants to store, process and eventually sell produce is a barrier in reviving local foods. As Marie said, she thinks many people stopped farming on the reservation in part, *“when the canneries stopped canning.”* Many of the canneries were owned by large companies, such as Larsen Canning Company who after closing their doors in Green Bay have gone on to become Bird’s Eye

Foods, a large, global food company. The Larsen company came across as somewhat infamous for the amount of land they owned or rented within the reservation boundary, which they used to grow large fields of vegetables (where some people worked as harvesters in their youth). As John said about Larsen, *“They bought a lot [of land]; anything they could get their hands on.”* So, while these types of large-scale, extractive industries may not fit into the picture of local food systems, some type of facilities for aggregating or even simply storing produce may help in getting more local food into tribal schools and nursing homes, for instance, by encouraging people to farm because they have another outlet for their produce.

Within the community there are two small commercial kitchens—one run by Tsyunhehkwa, the other by a famer in the area—which are open for community members to use. This is a great resource and some of those interviewed used these kitchens to create value-added products like jams, jellies or salsa, which were sold to the public, or to process large quantities of food for eating during the winter. The success of these commercial kitchens is an example of infrastructure which is appropriate for local food system revival. Other less tangible barriers to participating in and recreating local food systems include time constraints, a detrimental sense of individualism, a dependency on unhealthy foods, and the negation of the Oneida cultural identity over the last 200 years.

Time constraints and single parents

The importance the “luxury” of time or making the time to care for a garden, store and prepare foods was stressed by all focus group participants. As one woman shared, in planning for a garden and storing foods, there are *“All these things, and that’s why these foods should be in a person’s diet but they ain’t because of the things it takes to get them in your diet.”* Another agreed: *“It’s hard, and it takes time! And Wal-Mart’s right there!”* An elder shared that even though she is in her 80’s and still gardening, *“There were a couple of years where I did not plant anything because of my accelerated responsibilities at work.”* The abundance of single parents or families with both parents working was believed to be the main reasons why people did not have enough time to dedicate to growing or preparing healthy food. For example, even though she cooks (almost) every meal from scratch and she

and her husband had a successful garden last year, Anita hopes to make more time for these activities this year. *“I’m going to have more time to do it, because it’s really hard if you don’t have the time, or don’t make the time.”*

Several people noted the number of elderly people in the community and that the Oneida population is also aging. Another respondent in her late 70’s joked about rolling around on the ground while out in the woods picking wild leeks because her legs wouldn’t work well enough to bend. This is an amazing, and rare, amount of dedication to food! Beth thought that since elderly people tend to be retired, their incomes are less and/ they are living on strict, fixed incomes meaning they have less money to spend on food. On the other hand, Mark shared that even though he came from a family of gardeners and hunters, his family is now too old, too busy, or are retired and *“enjoy[ing] the good life. We just go to the store and buy food.”* So as they aged it simply became easier to purchase foods so they could spend time in other ways. One woman also felt that as the standard of living rises on the reservation more people are confused over, *“what is a need and what is a want.”* It’s harder for people to know where to place their time and energy. Others shared this sentiment as well and I decided to group some of these concerns under the concept of “individualism.”

Individualism

With the creation of the casino and the growth and success of different tribal programs, people rely more on their income and less on the relationships in the local community in meeting basic needs. Elder interviewees (55 and older) expressed the greatest concern and worry over the impact of an individualized culture for the youth, as was discussed in the section “Teaching the next generation.” I categorize this as a challenge because of the importance of relationships and responsibility that was identified by those actively participating in the local food system whether through gardening, selling produce, or processing food for storage. This concern was expressed in many different ways. For example, Beth thought that, *“...you could still talk to the older people and they still have that, I don’t even know how to say it, whenever they’re talking you can hear their enthusiasm for life yet. You don’t hear that in the young kids anymore. You just don’t.”* Some stated that

internet use and programs like Facebook foster a kind of inability to communicate in person, over the phone or in public forums.

Others expressed that while tribal programs and casino revenue in particular have overall been very good for the community, they have also changed the way people depend on each other because instead they can rely on a tribal program or a sufficient income created through educational opportunities and economic development. As Steven said about growing up on the reservation without running water, *“The tribe you know back then there wasn’t really...you had to...it wasn’t like that, you had to pay yourself. There wasn’t really anything here at that time in terms of what it is today. There wasn’t any tribal programs, at that time.”* His family paid to have a well put in during the late 60s, as did several other people interviewed. Again, one would not normally consider this a bad thing, to have running water, or roads, adequate housing, health care, and economic development, for example, but this sentiment—the good and bad aspects of a rising socio-economic standing—was viewed among many in the community as a hindrance to the recreation of a local food system. One person felt this may stem from the worldview that it is necessary to be thankful for what you have; so if life is easier it may be harder to be thankful for something as fundamental as food. Oneida cosmology also tends to focus many ceremonies on the community that tend to center around food and subsistence, whereas individual ceremonies emphasize health and right living. The majority of people cited that economic necessity would be the largest driver of food system change and would be the reason why people would return to gardening. If nothing else, the desire to be thrifty and save money when gardening needs the support of a community that is sharing resources.

The identity often associated with the “do-it-yourself” attitude, with the goal of being more self-reliant, is increasingly cited as a way to counter the negative aspects and waste of a culture of individual consumerism (see Hayes 2010). In a reservation community, this desire to be self-reliant stands in contrast to dependencies on outside groups—such as agencies of the federal government—created when tribal communities were colonized by Euro-Americans (see Calloway 2008; Barreiro 2010). In this light, placing individualism as a challenge created by the success of a growing tribal economy and strong government, and as an obstacle to rebuilding local food systems, may be an oversimplification of the issue.

Policies of relocation and assimilation which fostered dependency on the federal government may help explain further the complicated and potentially problematic nature of a rising sense of individualism in that these policies served to destabilize tribal cultures and communities. The role of commodities, however, was mentioned in almost every interview and is another aspect of this “legacy of dependency” that is very relevant to food system revival.

Legacies of dependency: a look at commodities

In most instances, diabetes is a result of over eating and eating high-fat and high-sugar foods and many expressed the view that people have also become dependent on easy and convenient foods which contribute to diet-related illnesses and obesity in particular, as well the frustration that, “*A lot of our people are lazy, obese.*” Others saw diabetes as a sign of malnutrition, that overeating stemmed from eating foods with little nutritional value, stemming in part from the introduction of commodity foods high in fat and sugar and low in nutrition. As one person said in a sort of grisly joke, Native people, who have been eating cheap, unhealthy foods supplied by the government (commodities), are simply the “*canaries in the birdcage*”, alerting society as to what happens to people when they subsist on cheap, processed foods. Furthermore, over time people have lost the taste for whole foods or an understanding of nutrition. Some perceived an outright fear of food not from a package, or expressed frustration over people who are hesitant to eat corn soup because their doctor, overseeing their care for diabetes, told them to avoid corn. “*They’re afraid of our foods.*” Even if the hesitancy is not fear, it demonstrates a lack of knowledge: people did not know whether there is a difference between sweet corn and the Oneida white corn and needed to seek expert advice, that of their doctor.

Others expressed frustration over the transition from unhealthy commodity foods to the prevalence of cheap, unhealthy food options now ubiquitous in many communities. Over time, people have gotten used to food being free or cheap. One person viewed these two types of food—commodity and cheap processed foods—as closely linked over time, creating a large barrier for people to overcome if they want to eat healthier today.

How can I convince someone that grew up eating fry bread and baloney sandwiches, and macaroni and cheese and McDonald's that you would feel better, and you would look better and you would have a better life if you ate beans and squash! There's no sexy commercials about beans and squash on TV! And even if there was a lighter menu item offered and it cost more, it would justify, 'I can't afford it. I can afford the dollar menu and nothing else.' So it's really a value system, it's an education issue, and a health issue.

When asked about commodity foods, one elder interviewee said that their family never ate those foods because, *"the old man never went after it anyway—he said he wanted nothing to do with it. But we was on a farm so we could handle it. People that didn't have no way, they got it."* Another respondent expressed similar sentiment, though his family did accept some commodities they continued to garden and commodities were used to supplement their diets. I conclude that families with land, stability and the knowledge to farm had more power over their food and ultimately their health. What also comes through in these statements is how rare it was for a family to be in a position to *not* need commodities. It appears that this kind of dependency on government-provided foods is a result of decreased land ownership and disruption of cultural practices which help sustain healthy diets. Today, instead of other foods, government provided or not, supplementing a diet of corn, vegetables, fruits and meat, the reverse is going on, where these healthy local and traditional foods supplement a diet made up of mostly inexpensive, processed foods. This brings deeper meaning to what food sovereignty—as a process and as a goal—can offer to the community. The destabilization many experienced as a result of moving from New York to Wisconsin—then going through allotment, boarding schools and relocation programs—has resulted in negative cultural consequences for the Oneida and their diet. In the next section, I explore further how the negation of cultural identity over time has and continues to negatively impact food system revival.

Negation of cultural identity

In my first meeting with staff at Tsyunhehkwa, the manager told me, half-jokingly, half-seriously, that, "It's not like we're trying to tell people to eat only twigs and berries." I immediately took to this statement because I was there in part to learn how "old and new" food practices and beliefs fit together; I didn't want to idealize the sort of stereotypical view

of Native food systems as strictly a hunting and gathering subsistence. Yet it was undeniable that many people felt that the amount of knowledge others within the community had in regard to traditional foods and practices was very small. As mentioned previously, one woman felt that many people don't know the qualities of healthy foods and of traditional foods in particular,

...a lot of our people around here are diabetic and if you have Indian corn soup, they'll go, 'I can't eat that.' They don't know that its different from the yellow sweet corn...Our people, they know this is something that's been ours for generations and generations, you know, but they don't trust our own food.

In addition to being uncomfortable or perhaps leery of traditional foods, many believed there was an outright fear of traditional beliefs and practices. Some well-known herbalists would, in the same breath as sharing their technique for preparing an herbal remedy, tell me that they don't believe in witchcraft. To them it seemed that herbal medicine, a traditional practice, was seen by others—and potentially me—as being connected to “witchcraft.” Others referred to this as “bad magic” but as Marie said,

I think too, with the medicines, when they came, Oneida from New York to here, a lot of them that did know the medicinal plants, some of them weren't here that were growing in New York. And then because of the fear and the idea that people would be taunting them about witchery and things like that, then it became kind of a lost art for a lot of people. And then too, by having the doctors here and giving you different medication, it was easier to go to the doctor and get medication than it was to go out and look for your medicine when you needed it, and prepare it.

Marie identifies several factors which played into the loss of the plant knowledge in the community, including the association of traditional medicine with witchcraft. People such as Jake Smith who practiced “*Indian medicine*” were sometimes arrested for practicing their craft. Others highlighted a broader negative stereotype of many things traditional, as in one person's statement about working to build community as part of a program to better address substance abuse on the reservation: “*...there's this stereotype or dogma that's been associated with our beliefs. Paganism, heathens, things like that...that a lot of our people believe...that's what they were taught, or that the things are backwards, that it can't coexist, today, the present.*”

This sentiment leads me to wonder how fear of or discomfort with Oneida cosmology impacts a food system which integrates traditional and conventional, whether organic or non-

organic, practices. Is one privileged—or seen as more valid—over the other? Something else that stood out from people’s comments was that though the Oneida language was not, and is not, spoken in most homes, the language has always been spoken on the Oneida reservation to some extent. The tribal government is actively promoting the resurgence of the Oneida language through educational programs and by doing things like requiring tribal employees to only speak in Oneida for a specified amount of hours every week. While this is an innovative approach to language revitalization, what’s interesting is that many elders today who speak the language and are part of its renewal were said to be hesitant to engage with traditional Oneida cosmology in practice; they wouldn’t talk about it⁶. Relate this to what one angry parent said is being taught in the schools—the prophecies without the skills needed to meet the challenges presented—and the reality and levels of transformations occurring on the Oneida reservation become evident. As one of the leaders in the Longhouse, a Faith Keeper, shared of his return to traditional practices, *“I was afraid of it because that meant I had to get out of my element where I was safe...it’s kind of like stepping into a whole different world then.”* This person demonstrates the will to face this challenge, and his own fear, and is sharing what he learns with the community (and with researchers like me). People are beginning to lead by example and through their experiences have also identified strategies and places to intervene in recreating an inclusive, culturally-relevant local food system.

Suggestions and strategies for success

The qualities, impacts and challenges of the Oneida food system that I have described are diverse and I intend that they, collectively, come across as part of a living, dynamic *process* in food system revitalization that relies as much on individual action as it does on community-level actions. How then, to proceed from here? The following suggestions for food system relocation come primarily from my interviews and focus groups; or from more casual conversations with members of the community. I asked for suggestions on how people could start gardening, or eating more local or traditional foods. I asked some to

⁶ This finding arose from conversations with three of the interviewees and two community members at large. It is important to mention how incredibly complicated questions regarding religion inherently are, particularly religions which have been so heavily denigrated by Western churches, and legally persecuted as well. For instance, I mentioned in Chapter 3 that it was illegal to practice American Indian religion until 1978.

imagine *one thing* they would do to achieve this goal. The majority answered that education was very important; one respondent also said that, “*We’re bombarded by information,*” yet still felt that people needed more resources to be able to make healthy food decisions. In addition to education, other suggestions include: creating new ways to access land; providing more internships in farming or food system development; having more local food in institutions such as tribal schools and nursing homes; providing internships and immersive experiences in raising food; linking cultural teachings directly with skills; and lastly, being encouraging and supportive of people making positive changes in their own lives.

Education, education, education

All respondents identified education as the most important strategy for increasing consumption of healthy, local and/or traditional foods. As Jacky said, “*Often times when people know better, they do better; not always but often. That’s my take on it.*” In the women’s focus group, the need for more information about nutrition was stressed. A better understanding of Oneida history also came up often and a lot of the conversations about education tended to revolve around how people just didn’t know the history or beliefs of the Iroquois Nation or the Oneida. One person in the community was convinced that most of his fellow community members probably didn’t know that corn was a crop native to the American continent, much less a staple crop of Native peoples and the Oneida.

Many also stressed how the availability of time was critical to having a successful garden or cooking healthy meals and education on how people can find creative ways to make time, or room, in their lives for growing and cooking food might be useful as well. The tribe’s Living in Balance program was said to be doing a good job of teaching families how to exercise, play together and also how to cook healthy foods. Almost all of those interviewed had attended at least one workshop on health and herbal medicines at Tsyunhehkwa, whether at the farm, in the cannery or at the retail store for information. One person even taught a tribally-sponsored, summer-long workshop series on gardening. Education is something that the Oneida tribe and members of the reservation community have been diligently working on and it seems that everyone who participated in this study recognized this and that the tribe could continue improving on what they were doing, perhaps

compiling a collection of resources useful to learning Oneida history and tacit skills like gardening.

Almost all those interviewed said that, in addition to a trusted family member or neighbor, they relied on books for answers to questions about the garden. The Oneida Public Library has a small selection of gardening books and this could be increased and advertised to the community. Alternatively, a lending library run by Tsyunhehkwa or OCIFS may provide additional opportunities for learning and for gardeners to interact with each other when looking for a useful written reference. Students could also create a library together with their teachers of books that help them learn the history and skills related to traditional Oneida food systems.

To provide information on trends in the larger agri-food system, OCIFS holds an annual film series as well, where they play documentaries which critically analyze the global food system. Movies like *Fresh*, *Super Size Me* and *Food Inc.* are examples of what is played and then discussed by attendees. As one person said, *“I know it’s becoming more prevalent that people are trying to understand where their food comes from and being able to make an informed choice. I don’t even think that it’s a small step, I think it’s a huge step!”* The places already created for community members to interact and discuss topics related to food, such as the OCIFS movie series, and opportunities to learn skills, such as the Living in Balance program, are good examples of how the tribe is creating opportunities for education. Improving ways to access land was another suggestion made by both the people interviewed as well as community members in general.

Create new ways to access land

As people gain interest in where their food comes from—or the nutrition of their foods, or what foods Oneida traditionally ate—they still need places to grow food or local farmers with land who can produce food to sell. All respondents expressed concern over the price of land. Several suggested that the tribe divide some of the large tracts of farmland it owns (land not held by individual tribal members) and lease it to people to create small farms. One person explained that if the tribal government divided one 300 acre parcel into six sections, the community could have six new small-scale farmers with land enough to

raise a small herd, or grow vegetables; they would also be in close community with other beginning farmers. This could encourage entrepreneurs to start new businesses and potentially buy the land from the tribe if their business is successful.

It's not just land that people sought however. These gardeners were ultimately after space to raise plants. For instance, Samantha suggested the tribe build a greenhouse that would provide community members a little space to raise some crops year round or to start their garden plants from seed in the spring. This idea for a community greenhouse is akin to the several community gardens the tribe already maintains successfully. Tribally-sponsored internships, something else the tribe already does successfully, were also seen as ways for people, and youth in particular, to build the interest and the skill base needed to grow and eat local food.

Internships in food systems

Some interviewees stressed the need to increase opportunities for youth to gain skills and income at the same time. Some tribal programs offer internships to registered tribal youth or to adults through other work programs. Some of these internships could be used to allow youth to gain experience on one of the tribally-owned farms or in other aspects of the food system, such as cooking in the schools or working at the cannery. During the 2010 season, several adjudicated youth worked at the Tsyunhehkwa farm as part of completing their assigned community service hours. In past years, two of the interviewees had children who volunteered at Tsyunhehkwa all summer-long in exchange for credits they could use to buy food from the Tsyunhehkwa farm and the retail store. These were positive experiences for both of these families and one volunteer has since gone to college where she continues to work with food systems. Tsyunhehkwa has the capacity to support interns as active contributors to the farm's success while the interns gain awareness of food and the tools needed in food production, processing or distribution. Part of the success of these two examples may be that consistent work over an entire summer provided for an immersive experience which allows the person to gain a deeper understanding of their own interests and passions while learning.

The adults interviewed all grew up gardening but often talked about one or two years where they felt like they learned a lot, which got them “*hooked*”. I would define this as an *immersive* experience in growing and storing food. As one person said, “*I think you just need to educate yourself too. It just seems so simple once you understand it, and once you experience it—I think you have to understand and experience it.*” Many people felt that you can read and attend workshops but more than anything, you also have to have the interest in participating in local foods, whether through growing, storing, cooking, etc. in order to be successful; and you have to experience the effects of doing these things. Creating an environment or an opportunity to engage in these activities over time was seen as one way to foster this interest in a long-lasting way. Marie was concerned for the younger generation who, “*aren’t used to self-preserving your food, like drying the corn. And they don’t think about next year, or the year after. They just think about now and maybe next week, rather than thinking ahead when you’re going to need it later on.*” In this light, it seems an immersive experience, for example, over an entire growing season, may also help introduce people to the kind of longer-term thinking that Marie describes. Internships and other immersive opportunities can provide ways to introduce a wide range of people to the many assets of local foods. Increasing the availability of local foods in tribal institutions, such as schools and nursing homes, was the most common suggestion given to encourage youth specifically to have an interest in their food.

Offer more local foods in tribal institutions

Many felt that the tribe should continue to help subsidize local foods so that they can be the same price, cheaper or even given away for free in order to encourage people to develop a taste for fresh foods, as well as the skills to prepare them. This is part of the reasoning behind having local foods in institutions: that people will have to eat vegetables, local meat, etc. if it’s what is being served to them. The desired outcome is that people over time will come to prefer those foods over chicken nuggets every day, for example. As Anita said, “*I always wish that the tribe, we have so much farm land, if they would just plant the necessities and just give it to the Nation members free as part of being Oneida...It would help get people to a vegetable diet.*”

Another reason cited for having more food in tribal institutions is to provide incentive for the tribe to have large gardens for students to work in; they would essentially be paid by selling the produce to the institutions. This could be linked to internships as discussed above or be something entirely separate. Interviewees recognized there was a lot of behind-the-scenes work, on policies or kitchen capacity for example, that was also needed but still felt that collectively the tribe could do more to grow local foods for the tribal institutions. Here, jobs for youth could be linked with improving nutrition for a large part of the community. As was discussed in the section on “Teaching the next generation,” respondents felt that cultural teachings should also be more directly related with skills.

Link cultural teachings with skills

This suggestion stems primarily from comments made during focus groups, including frustration expressed by some over how little they felt others in the community knew about Oneida history in general. The process of learning traditional skills, or culturally-based skills, like having maple syrup camp to boil down maple sap into syrup or learning how to cook corn soup, seems somewhat personal. Finding places to learn these skills seems to happen through word-of-mouth, by finding the person you “*know who knows*” how to do something, or has a stand of maples, or white corn for you to come help process while learning how to do this. The tribe provides cookbooks on Iroquois foods and pamphlets on how to make black-ash baskets for example, but then the learning occurs on the individual level or perhaps the family level. One person shared that she is trying to start a garden space for youth in the community to come learn how to plant along with her as she learns.

Schools were another place where skills can be, and already are to some extent, directly linked to cultural teachings. This could be improved, for instance, by providing more in-depth education in the garden already established at the elementary and middle school (the Turtle School). One person felt that schools could play the strongest role in making this link: “*I think the best place to start to raise our consciousness of our people and of our consumption of our traditional foods has to start in the school.*” Another person talked about how schools empower students to go home and teach their parents what they have learned:

...I see kids at the schools now bringing it home and they want to do this [grow food] and then they're teaching their parents. For real, there's that missed generation in there, where people didn't plant, people didn't want to plant. Look at what's the average age of a farmer now!

The relational quality of the food system reveals that to some extent, learning skills happens within networks of people, whether a group of friends or family or through a tribally-sponsored internship or workshop.

Be encouraging and supportive of each other

As more people engage with the local food system, they will likely create these support networks; their success may even be dependent on having the support and encouragement of others. This last strategy or suggestion is a simple one: it asks that people simply encourage each other because making the time, learning the skills and asking tough questions about history, and possibly even your own beliefs, are not easy things. As one person said about growing traditional foods,

It's a lot of work to grow food and when you're growing traditional food, these are things—like you can't buy hybridized Indian white corn, it doesn't exist; you can not buy that seed. So now you have to look for the seed, you have to find a source for the seed; there's work involved in that. Then you have to be able to understand how to grow corn, which is kind of a lost knowledge because not very many people grow corn anymore, especially white corn. You know that your resources are smaller. But, if you were able to overcome all those barriers, out of sheer determination, opportunity, luck—land base—you had all your ducks in a row, then the responsibility of taking care of the corn and harvesting it and going through the whole process like Tsyunhehkwa does. This is like a full time job, taking care of these things. It's not something you do on a Saturday for an hour because you want to, as a hobby.

This sounds like—and most certainly is—a lot of work! People emphasized that encouragement didn't mean lecturing someone, it meant providing support and positive peer pressure as the person begins tackling some of these challenges.

As one person said, *"I think it's got to come from the people themselves."*

Community members and tribal programs can do as much as they can do and continue to think of ways to improve on what has been successful but ultimately it seemed that, as was the case with learning cultural skills, learning to garden in general—and particularly with

traditional crops—is something that is personally motivated. Education and opportunities can help provide this motivation and people in this study were optimistic about the growing interest in local foods and in traditional foods within the reservation. That is something to be supportive—and proud—of.

Chapter Seven

Discussion and conclusion

“It is wrong to think that bodily health is compatible with spiritual confusion or cultural disorder, or with polluted air and water or impoverished soil.”

(Wendell Berry in *The Unsettling of America*, 1977)

There is a vibrant and growing movement in Native communities to reclaim and rebuild local food systems. Yet there are few studies on this process and even fewer accounts of contemporary Native American farming and gardening practices. This research explored dietary change, indigenous knowledge, and the process of rediscovery associated with traditional foods within the Oneida’s current local food system. I also examined what qualities Oneida community members identified about their food system, and their challenges and suggestions for future development. What first drew me to the Oneida community was the cohesive, tribally-sponsored and community-driven progress the Oneida had already made in regard to their food system. The Oneida have come a long way in reclaiming their land, culture, health and community. As traditional foods and locally produced foods became more available the knowledge base to grow, harvest, store and prepare foods also increased. This made the Oneida community an ideal place to explore the role of indigenous knowledge as it functions, lives and changes throughout the process of food system relocalization.

It is not my intention with this discussion to summarize the knowledge, stories and beliefs of those interviewed but rather bring attention to a few key elements about the Oneida community and their process of food system revitalization which emerged from the study. The way knowledge accumulated and moved between people and the importance of responsibility and relationships all highlight the *interdependence* between people—and between people and the natural environment—that this local food system required. This interdependence is very different than the dependent relationships which have been so detrimental to Native communities over the last 200 years. This is an important element of food sovereignty because reversing this trend of dependency can lead to the creation of resilient communities and the taking back of power; ideally leading to the relocalization of

power and decision making. Through food system revitalization, Oneida and all members of the community, both tribal and non-tribal, are working together, and the diversity of skills and knowledge that each community member possesses is valued as part of this movement. In doing so, food and agriculture provides a means for the Oneida to express and define their identity—and their sovereignty—through the creation of healthy, interdependent relationships.

In this process, the role of the Oneida tribal government seemed to be to subsidize and promote local foods and healthy lifestyles, and to lead by example. They also provided key resources, such as land, and important institutions, as was seen with the creation and enforcement of environmental regulations. Lastly, as one Tsyunhehkwa employee said, *“We’re here to teach people how to fish, not just give them a fish to eat,”* invoking concepts of empowerment over simply assisting community members. The role of community members then was to engage with these opportunities and learn—to try and to do—yet they were still responsible for creating their own opportunities and resources as well. Throughout this process, it seemed equally important for people to encourage others, sharing with them what they had learned. I proposed that there was no clear path for teaching the next generation traditional skills in particular because the leaders in this movement, the teachers, are themselves still learning. There is in no way anything wrong with this situation; it simply asks for a different approach to knowledge transfer, one where knowledge is co-created across and between generations—and likely across belief systems as well.

In reflecting on this study and the Oneida community, I think of how far they have come, together, as a community. They have brought back to life their unique culture by realizing their power and saying no to unhealthy things, whether it was their food, a policy or the way the land was used. Whatever the problem or issue, what the Oneida have done and are doing is impressive—and it’s complicated. In thinking about the role of indigenous knowledge in creating food sovereignty, it seemed that innovation stemmed from the fact that indigenous knowledge is indeed an *active* knowledge. It’s tacit, intangible; it is a lived knowledge which requires innovation to continue. Indigenous knowledge as an approach to development provides a means of thinking about and taking constructive lessons from the past in order to create new practices; essentially, to innovate. How can a community

constructively speak about the past in a way that can inform decisions made today and in the future? This study in no way produced a how-to manual for Native food systems revitalization. I hope that it does demonstrate that indigenous knowledge is useful in this task because it asks people to look back to the past and into the future while firmly being rooted in the present through the emphasis on hands-on, tacit skills.

Suggestions for future research

Areas of future research that emerge from this study revolve around two themes: the protection of cultural property, including seeds and knowledge; and the levels of transformation that occur within a community that is returning to a worldview that was so heavily persecuted yet persisted anyway. Are the Oneida concerned with protecting the genetic resources of the plant varieties they have cultivated and grown with over the generations? How does patenting or generally protecting plants through some legal means conflict or support the community's worldview? In particular, how does patenting intersect with the role plants are in and of themselves understood to have? Questions on worldview could begin by examining how Christian and traditional Oneida beliefs intersect and where they diverge. This study demonstrates that food could be the focal point or unit of analysis through which to explore these and many other questions.

Appendix

Interview and focus group questions

Background

1. Please share your name, age and clan if a tribal member.
2. What is a favorite memory you have about food?
3. Did you grow up gardening or farming with your family?
4. Do you have a garden now, or had one in the last few years?
 - a. Why do you have a garden and what made you start?
 - b. If you don't garden now, are you planning on starting a garden soon?
 - c. Why do you want to start gardening?
 - d. Where will the garden be located?
5. Would you consider gardening to be a traditional Oneida practice?
6. What types of foods do you think are traditional?
7. What foods are local?

Agricultural landscape

8. How did you or your family select an area for a farm or garden?
9. Do you know what type of soil is in your garden (or around Oneida)?
 - a. Are certain areas better for certain crops?
 - b. Are some areas more likely to have disease or pest (weed and insect) problems?

Crops

10. How do you decide what crops to plant?
11. Do you grow the Three Sisters (corn, beans and squash)?
12. Can you explain how you plant your corn? (ex: spacing, depth, intercropped, etc)
 - a. Beans?
 - b. Squash?
13. Why do you grow these?
14. How do you care for your crops? (ex: fertilizer, weeding, etc)
15. What kind of yields do you usually have?
16. Do you rotate where you plant different crops?
17. Do you have to water your crops?
18. Do you have problems with insect pests?
 - a. How do you deal with them?
19. Do you have problems with weeds?
 - a. How do you deal with them?
20. Do you use any traditional techniques like burning in your garden plot, or planting by the moon?
 - a. Do you use any other techniques that you might consider traditional?
21. How did you learn to grow things in the way that you do?

Seed saving

22. Do you save seed?
 - a. If so, how did you learn to do this?
 - b. Why is this important/why do you do it?

Wild foods and medicines

23. Do you collect any wild foods or medicines?
 - a. Can you describe what you collect?
24. Do you hunt or fish?
25. Where do you go to do these things?
 - a. Is it far or near to where you live?
 - b. Have you always gone there?

Food storage and preparation

26. How do you preserve or store fresh foods?
 - a. Do you can foods?
 - b. Freeze or dry foods?
 - c. Have a root cellar?
27. What are some of your favorite recipes or ways to eat traditional or local foods?
28. When do you like to eat these foods? (ex: holidays, ceremonies)
 - a. Do people in your family like these foods?
29. Do you have problems finding places to store foods? (ex: little refrigerator room or a small kitchen/storage area)
30. Do you have any difficulties in preparing or storing foods?

Knowledge transfer

31. Does anyone help you in the garden now?
32. What did you learn gardening or farming when you were younger?
33. Where do you go if you have a question about gardening? (ex: friend, UW-extension, tribal program).

Land tenure

34. Do you own the land where you garden or farm, or will garden?
 - a. If not, what agreement do you have to use this land? (rent, from who)
35. Would you like to purchase land in the future?
 - a. If yes, is this because you want garden or farm space?

Community land capital

36. Are there local farmers who own land?
 - a. If no response, ask if the tribe owns land.

Distribution

37. Do you ever barter food for other things that you need?
38. Do you sell anything that you grow or make?
 - a. Who do you sell to?

39. Where do you get traditional foods, if you want something but haven't grown it yourself? (ex: white corn or apples)
- a. Where do you get local foods?

Accessibility

40. Do people in the community have access to local food?
- a. Do you know a lot of people with gardens?
41. How available are local foods within the community?
- a. Traditional foods?
42. Do you think these foods are affordable?

Health

43. What are some of the health problems faced by people in the community today?
44. Do you feel like eating local or traditional food is good for Oneida people?
- a. If so, why?

Environmental impact

45. Do you have any concerns about the local environment?
46. Do you feel like growing food using some of the techniques we've talked about is good for the environment?
- a. If so, why?

Culture

47. Do you think traditional or local foods have positive impacts on cultural identity?
- a. What are some of these benefits? (ex: self esteem, resource for problem solving)
48. Do you need certain foods for religious ceremonies?
- a. For medicine?
49. Do beliefs, rituals, or ceremonies tell anything about how to grow crops in the field?

Looking to the future

50. What do you think would happen if everyone in the community ate more of the traditional foods?
- a. Local foods?
51. Do you have any ideas on how more people could have access to traditional or local foods?
- a. What is your one big idea for local food system development?
52. Do you have any final thoughts or reflections about traditional and local food systems, cultural identity, health, the environment—on anything from our conversation?

Thank you!

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